

American Aviation



The Air Industry's Pioneer Independent Magazine

Dec. 15, 1949

Chairman With Courage

WE LIKE a man with enough gumption to say what he thinks and to stand up for what he believes to be right. In these days of ideological stooges and simpletons who give up their American birthrights to plug-ugly schemers and rabble-rousers, it is good to find in government a man who backs up his own agency and the industry which it serves.

W. W. P. CAB Chairman Joseph J. O'Connell, Jr. is fully aware that the CAB and the air transport industry are under fire from several directions. On the one side there are the academicians who would like to dump the airlines into an over-all transportation agency where they would be put on ice promptly. On the other side are the critics who are sniping for various reasons about the alleged subsidies being paid out to the industry.

In a speech the other day Mr. O'Connell said he could not view with alarm the fact that on top of a total national transportation expenditure of about 38 billion dollars annually, the federal government spends another billion to a billion and a half to spur the development of a better transport system. And out of this federal expenditure, he pointed out, aviation receives only a fair portion.

"In 1938 we embarked on a frankly experimental and developmental program for aviation," he said. "That experiment has been in progress only seven peacetime years and in that time has yielded remarkable results.

"There will and should come a time in the not too distant future when air transportation will have to exist entirely on its own abilities without the benefit of government support—either direct or indirect. To attempt to bring this situation about at the present time would mean a long delay in the full realization of a new resource.

"It would be as though the railroad land grants had been withdrawn before the transcontinental railroad were finished."

Chairman O'Connell makes good sense. He does not share the views of those who regard our transportation problems as mortally dangerous. He favors coordination—but not the stifling type of coordination being proposed by advocates of an over-all transportation agency. It is good to know that the chairman of the CAB can be an able defender of his own



Operations Executive for Northwest

M. B. "Mal" Freeburg, who has been with Northwest Airlines since 1928, was recently promoted from manager of flight operations to a newly-created position of operations executive. In addition to directing flight operations, he is in charge of station and cabin service divisions. He has the distinction of having been the first U. S. pilot to receive the Congressional Air Medal of Honor.

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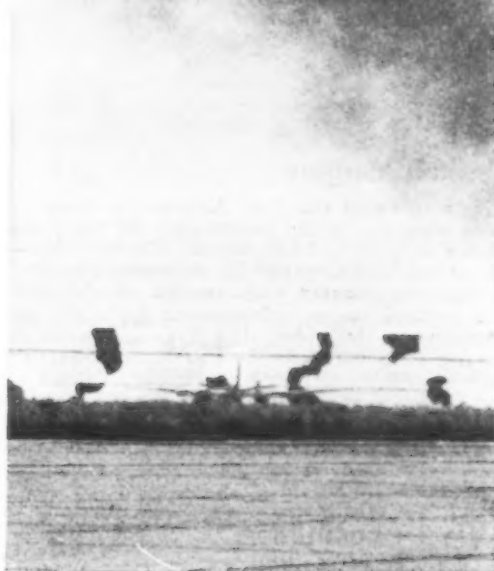




To Support the Ground Forces

THE high-speed Martin XB-51 is the Air Force's first postwar plane specifically designed for blasting enemy supply lines and installations in support of ground forces. In addition to its unique power plant arrangement, this revolutionary new plane has drastically swept-back wings, a T-shaped tail and tandem landing gear... plus many features still classified under military security regulations.

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BACKGROUND & TRENDS

Jet Prototype Program Developing

A program involving some kind of **government aid in a prototype jet transport aircraft program** is shaping up, and there's a possibility of legislation in the next session of Congress. This aid may be in the testing of new jet transports, rather than in their design. There have been recent conferences between a special committee of the Air Coordinating Committee and leading aircraft manufacturers, and some of the plane makers feel that the industry could finance the building of prototype jet passenger planes if government would finance the long and expensive testing. At least two of these manufacturers previously opposed prototype legislation that would have given the military control over design development and testing. The special ACC group, headed by CAB Member Harold Jones, is agreed that government must do something, and is trying to decide what that something should be. There's considerable support in the committee for underwriting at least the test program.

Investigation of Common Fares?

A hint that it may **investigate all common-fare tariffs** has been given by CAB. It found unlawful United Air Lines' proposal to extend the current \$160 U. S.-Honolulu fare to all the Islands, making possible transportation to any Hawaiian point beyond Honolulu over Trans-Pacific Airlines or Hawaiian Airlines at no extra charge. Significantly, CAB added: "We recognize that there are presently in effect certain common fares in other parts of the air transportation system. None of these fares has, however, been investigated or formally approved by the Board. It may be that investigation might disclose that some or all . . . are unlawful."

Alaskan Mergers

Indication that the Civil Aeronautics Board is giving more attention to the **complicated air route pattern in Alaska** is seen in CAB Member Harold Jones' current trip to the Territory, and his statement that CAB wants to see a coordinated route pattern developed but prefers to have merger plans come from the companies themselves. He added that if proposals aren't forthcoming, CAB will take steps to "smooth out" the route situation. Some carriers had already started to move, and as Jones arrived in Alaska, Pacific Northern Airlines announced its acquisition of Reeve Aleutian Airways, subject to CAB approval. This merger would give PNA a 4,500-mile system and make possible the largest trunkline operation in Alaska.

Lee's Reappointment

Josh Lee's reappointment as a CAB member at the end of this month is being taken for granted. There's been little of the usual speculation about reappointment and if there's been any opposition it's been kept well under cover.

Warner Advised to Resign

Dr. Edward P. Warner, who as president of the Council of the International Civil Aviation Organization, has been one of the few men with the knowledge to keep track of ICAO's widely varying functions, wants to resign for reasons of health. He's now on six months' leave because of ill health, and doctors advise him to leave ICAO permanently. A capable successor will be hard to find.

Contraction and Expansion

When 15 railroads announced that they would pull out of the **Rail Travel Credit Agency** on Jan. 1, the airlines took occasion to announce that their travel credit plans are constantly expanding. The 15 roads, including most of the larger ones in the east, said they were abandoning the ride-now-pay-later plan because it cost too much per transaction and never produced expected results. Thirty-two roads remain in, however. The airlines, not sharing the 15 roads' view, emphasized that the travel credit card system is being constantly expanded "as more worldwide airlines join the international plan."

IATA Sidelights

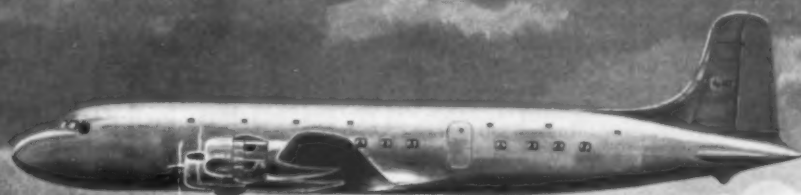
Little publicized was a British attempt at IATA'S Mexico City traffic conference meeting to use a **devalued sterling fare between London and Nassau** which, when combined with onward tariffs, would have produced a low rate to South America. It was opposed and defeated on grounds that it would have broken the entire Europe-South America fare structure . . . Reaction to the **fare-and-a-tenth 15-day winter excursion** to Europe was mixed, although the proposal was approved. Some officials doubt that it will produce much traffic because they claim businessmen need more than 15 days, and because there is little demand for vacation travel to Europe during the first 10 weeks of the year. Others, however, believe it's worth a try. They see little danger of diversion from regular service because the only persons using it would be those using the 60-day off-season tariffs, and because it's only one-way (U. S.-Europe). A 3% increase in traffic would overcome any diversionary effects, they say . . . When Juan Trippe, Pan American president, tried to get CAB approval of **Atlantic year-round tourist service** prior to the IATA meeting, he surprised those present by proposing to use DC-4's instead of Boeings or other planes. First time the proposal had been made. Trippe's presentation to CAB, incidentally, was probably the most detailed he has made yet, complete with charts, graphs, proposed fares, expected financial results and other details.

Among the Airlines

Airline traffic fell off following the recent accidents, and financial results of 1949's last quarter may not be up to earlier expectations . . . Constant complaint in airline circles is over **increasing complexity of fair situation**, caused by all the special tariffs now on the books. One general sales manager recently found it impossible to quote a fare over his own line without calling his office for advice . . . When Air Transport Association's board of directors meets this month it will consider advisability of initiating again an **institutional advertising campaign** in newspapers and magazines . . . United Aircraft Corp. will continue in 1950 its effective series of ads featuring the slogan "**The Air Is Yours—Use It.**" It's aimed at increasing airline travel . . . Two schools of thought among airlines on **advertising** which draws comparisons with other forms of transport. One favors it, other opposes. Meanwhile, some railroads are becoming increasingly vociferous in ads against airlines . . . Effect of **recently-liberalized military travel rules** are beginning to be noticed, with domestic airlines carrying more military business . . . You may see British Overseas Airways Corp. **shift some Constellations** on to the route from London down the west coast of South America, when it has sufficient Stratocruisers to handle New York-London.

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DC-6A NEW "LIFTMASTER" CARGO TRANSPORT opens new era in the rapidly expanding air cargo field. Currently being exhibited to airline officials, the "Liftmaster" is the first four-engine cargo airplane specifically designed to fill the need for a modern, medium-

size cargo airplane for military and civilian use. In contrast to the Douglas DC-4/C-54, the new DC-6A carries $\frac{1}{3}$ more cargo at $\frac{1}{3}$ less cost. The DC-6A flies 100 mph faster than the DC-4/C-54—thus making possible overnight transcontinental cargo service.

GREATER SPEED



DC-6B THE NEW DC-6B will be the most versatile air transport ever designed. Like the "Liftmaster," it will be 5 feet longer forward of the wing than the DC-6 and will thus accommodate 8 additional passengers in DC-6 luxury. High density models will carry up

to 92 passengers. The over-ocean DC-6B with large galley, coatrooms and lounge will carry 54 passengers in air-conditioned comfort. The 9600 hp developed by the Douglas DC-6B engines will make this the *fastest* non-jet luxury air transport in service.



News in Brief

Group charter operations over the Atlantic should reach new high next year, and both certificated and non-certificated will probably share in the business. The Civil Aeronautics Board last week announced it would welcome applications from both types of air carriers to operate group charter services between the United States and Europe, during the period between June 1 and September 30, 1950. Heavy travel to Rome during the Holy Year, coupled with devaluation of foreign currencies will be too much for U. S. scheduled services, CAB said, thus opening the way for use of additional facilities of charter operators. TWA, the only U. S. line certificated to serve Rome, will oppose the CAB proposal "with every weapon at our command," Warren Lee Pierson, TWA board chairman, declared.

Bonanza Air Lines, feederline headquartered at Las Vegas, Nev., has advised CAB that it will begin scheduled feederline service over its Reno-Phoenix local service route about December 16. It will use DC-3's. CAB late last month gave final approval to the transfer of TWA's Phoenix-Las Vegas route to Bonanza.

Use of jet assisted takeoff in South America is spreading, with Pan American-Grace Airways now using Aerojet JATO-equipped DC-4's on its service between Lima, Peru, and La Paz, Bolivia. Heretofore, Panagra has taken off from the 13,000-ft. high La Paz airport only with DC-3's. Braniff Airways was first to use JATO DC-4's at La Paz, and has gained an additional 6,000 pounds potential at a cost of approximately \$24 per trip (the cost of re-charging the solid propellant motors after every 100 hours of flight). Pan American Airways is seeking CAA approval for use of JATO on its Convair Liners at Mexico City where the high altitude also imposes severe weight penalties on the aircraft.

The air star route program is moving ahead slowly with the Post Office Department issuing its first advertisement for bids covering the operation from Charlevoix, Mich., to St. James, on Beaver Island in Lake Michigan, a distance of 35 miles. Term of the contract will be from January 1, 1950, to June 30, 1951, with the operation running from January 1 to March 31 each year. Bond requirement with bid is \$2,500. The contractor will be required to transport all classes of mail at a flat rate per airplane mile for a base load limit of 500 pounds per trip, with mail in excess of that limit to be carried at special rate per airplane mile for each 100 pounds.

The Collier Trophy is slated to go to an organization rather than to an individual this year. The Radio Technical Commission for Aeronautics, the organization that formulated this country's long-range air navigation and traffic control program, is expected to get the award. The 1949 Wright Brothers Trophy will go to Charles A. Lindbergh, in recognition of his contributions to aviation over the past 22 years. Presentation will be made at the annual Wright Brothers Memorial Dinner sponsored by the Aero Club of Washington on December 17.

United Air Lines, which has been coolish toward the air coach idea, is planning a reduced-fare experiment on its Los Angeles-Seattle and Chicago-Seattle routes, with tariffs effective January 16—subject to CAB approval. Fares will be based on a flat 5¢ per mile for travel on DC-4 flights on which cabin-loading of cargo is standard practice. Though a full cent per mile higher than the present air coach level, the new fares will be 17% below existing premium fares.

Aeronca Aircraft Corp. has started deliveries on its 1950 Champion which features a 90-horsepower engine and extensive new electrical provisions. Aeronca orders now total over \$300,000.

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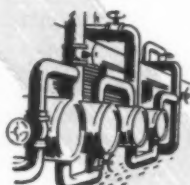
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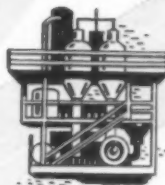
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EDITORIAL

(CONTINUED FROM PAGE 1)

agency and that the defense of this agency is wrapped up in the welfare of the air transport industry as a whole.

Why Not Operettas?

IN THESE columns in the October 15 issue we tried in a small way to answer the \$64 question posed by Ray Snyder of Snyder Aircraft Co., Chicago, as to what can be done to help the personal airplane industry in these days of declining production.

We don't have the answer and said so, but we did focus attention on the lack of coordination among the many government agencies dealing with aviation, and the lack of an activated federal civil air policy. Among other things we said the CAA seemed to us "to resemble a constantly enlarging symphony orchestra tuning up for a major concert with the audience constantly shrinking. For each new instrument added to the orchestra half a dozen patrons leave the audience. The players threaten to outnumber the audience."

CAA Administrator Del Rentzel has responded to the editorial as follows:

Dear Wayne:

I thoroughly enjoyed reading your open letter to Mr. Ray Snyder in *AMERICAN AVIATION* of October 15, and I am sorry that I have not had time to write about it before now but I have been very busy these last few weeks.

At the time I read your letter, I was on my way to Oklahoma City for our Regional Administrators' Conference. This lasted three days and nights, during which time we discussed what should be the program of our Office of Aviation Development for the promotion of personal flying. As soon as the meetings concluded, we went into a two-day huddle with our Non-Scheduled Flying Advisory Committee.

In all these activities the CAA "orchestra," to borrow your colorful and amusing term, has been attempting to play a score that would be harmonious enough to please the many expert composers in our present audience and yet attract inside the hall a few of the many amateurs now standing outside.

Perhaps the score we are attempting to play is not a masterpiece. After all, we in the CAA can lay no valid claim to being "Beethovens" but just as we begin to play, the score is jerked away and each member of our aviation industry audience insists on substituting his own opus. The result, therefore, only can be discords and sour notes.

To all of us who are sincerely interested in the welfare of the industry, it should be most obvious that if all of us for once could agree upon one score, we then could play the same music—in the same time and with the same semblance of harmony.

As you say, and I thoroughly agree, no one has all the answers, and I certainly am no "Toscanini," but we are doing our very best with the music available and we will welcome, with no trace of professional jealousy, any better creative ideas which may be offered us, from within or outside the aviation industry, as long as all agree upon the score.

Sincerely yours,

DEL RENTZEL,

Administrator of Civil Aeronautics

It is good to have a CAA Administrator who has a sense of humor. And among his other distinctions is the fact that he is the best Administrator the CAA has ever had. But maybe the solution to this musical

business is to throw away the Beethoven symphonies and try a little plain barber shop harmony or maybe an operetta or two with some "South Pacific" tunes thrown in for good measure.

30-Year Milestone

IT IS not generally recognized that the second oldest airline in the world is in the western hemisphere.

On December 5, 1919, a small group of Austrians and Germans founded at Barranquilla, Colombia, an airline under the name of Sociedad Colombo-Alemana de Transportes Aereos, known more popularly as SCADTA.

The founders chose their first route wisely. The capital of Colombia is Bogota, far in the interior and high in the mountains. At that time the only trade route was from Barranquilla, the seaport, up the Magdalena River for 650 miles to Girardot and thence by rail up to the capital. The journey required from a week to a month depending on the season. SCADTA began operating seaplanes up the river and became one of the few successful early airline ventures in this part of the world.

The seven-hour air trip was expensive, ranging from 30c to 40c per mile. For many years the Junkers F-13, a single-engined seaplane cruising at 80 to 90 miles per hour, was standard equipment. The records show that in 1920 twelve passengers were carried and 4,325 kilometers flown, but within a few years business began to increase and SCADTA expanded its services.

In 1931 Pan American Airways purchased an 84% interest in the airline which was then operating 1,741 route miles. In 1940 with war going on in Europe, SCADTA and another airline known as SACO were merged into a new national company called AVIANCA and the German employees were discharged. Pan American's interest was reduced to 64% and today, in concurrence with national Colombian law, PAA is a minority stockholder.

Through the years AVIANCA has become one of the big airlines of the world and world-famous as a cargo carrier. It is now flying 16,870 unduplicated route miles including a route to New York. In 1948 it flew over 450,000 passengers and 48,000,000 lbs. of freight and express. In a country which even today has only 2,000 miles of railroads and 14,000 miles of highways, it is a vital medium of transport and essential to Colombian economy. It serves sixty cities and towns.

A feature of AVIANCA which may make it unique in the world is the airline's exclusive mail agreement with the government which dates back to 1919. AVIANCA collects, carries and delivers the air mail, is the sole seller of air mail stamps, and pays the government a set fee for the franchise. It is, in fact, the sole air mail service for the country.

It will be 1951 before the early U. S. airlines celebrate their 25th birthdays. To Dr. Jorge Restrepo Hoyos, its president, and its other officers and its employees, we congratulate AVIANCA on reaching its 30th anniversary.

WAYNE W. PARRISH

AMERICAN AVIATION

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5 more airlines join the switch to B.F. Goodrich brakes

283 DC-3s now operating more economically for 17 airlines

LAST spring, we announced that 12 U. S. airlines had switched 246 DC-3s to B. F. Goodrich brakes. Now five more airlines (above) have reported a changeover . . . and still others are on order.

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other brakes. The only tools needed to reline it are a screwdriver and pliers. And the *full circle* braking action of the expander tube spreads wear evenly, lengthens brake life. Maintenance man-hours, "in-shop" time and replacement costs are all cut.

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FIRST IN RUBBER

Helicopter Transport Outlook Good; AF Order Coming

By JAMES J. HAGGERTY, JR.

Any air traveler who has ever been whisked into cities like Detroit, Cleveland, Los Angeles, Chicago or New York from distant places in a few hours and then spent another tedious hour plying his way through city traffic to a hotel is interested in the possibilities of the commercial passenger helicopter.

The airline connection helicopter has been well discussed in the last couple of years and from time to time there have been applications for rotary wing passenger service filed with the Civil Aeronautics Board. The service has never been put into operation for a very practical reason—there hasn't been a helicopter capable of handling the assignment on a paying basis.

Now, however, it appears that commercial operators will soon have a plane available for airline connection or short haul commuter helicopter service. Paradoxically, it appears that the military will have the deciding word as to just what type of helicopter goes into commercial service. Here's why:

There are four types of helicopters now flying which could be converted to commercial use with very little trouble. Three of them—the Piasecki HRP-2, the Sikorsky H-19 or S-55, and the Bell YH-12—are in limited production under military contracts. The fourth, the Mc-

Donnell XHJD-1, is an experimental Navy design.

These four manufacturers could, on comparatively short notice, start turning out commercial versions of their planes. But—and it's a big but—the development costs involved would be so great as to make the price of the plane prohibitive to the operator.

AF Order Will Help

There is a solution to the price problem. The Air Force now has a requirement for a large, rescue helicopter capable of operating in Arctic regions. Specifically, the Air Force wants a fairly long-range plane that can fly 250 miles from a base, hover at an altitude of 12,000 feet (above sea level, not terrain) while hoisting six litter patients aboard, and return to its base with that payload. It is now in the process of evaluating these four large types and in about a week should come up with a decision.

The manufacturers are eagerly awaiting that decision because of its far-reaching effect on their respective futures. For to the winner will go a substantial production contract—30 or 40 planes. This large scale production will enable the evaluation winner to defray development costs and offer a commercial rotary wing transport at a price somewhere in the neighborhood

of \$150,000-\$200,000, which should be within the operators' purchase limits.

The Piasecki HRP-2, the largest of the four, is favored by some potential operators because of its large seating capacity. In a short-haul, low-fare operation, the number of seats available in a passenger helicopter is going to be an important factor. Piasecki plans to offer three basic seating arrangements in its commercial version, with one model, a high-density type, having as many as 21 places, with a seat pattern no more cramped than a Greyhound bus. Piasecki is able to accomplish this because of its tandem rotor (one fore and one aft) configuration, which affords a wide center of gravity range. This c.g. range is also important to a commercial operator since it eliminates the usual helicopter balance problems.

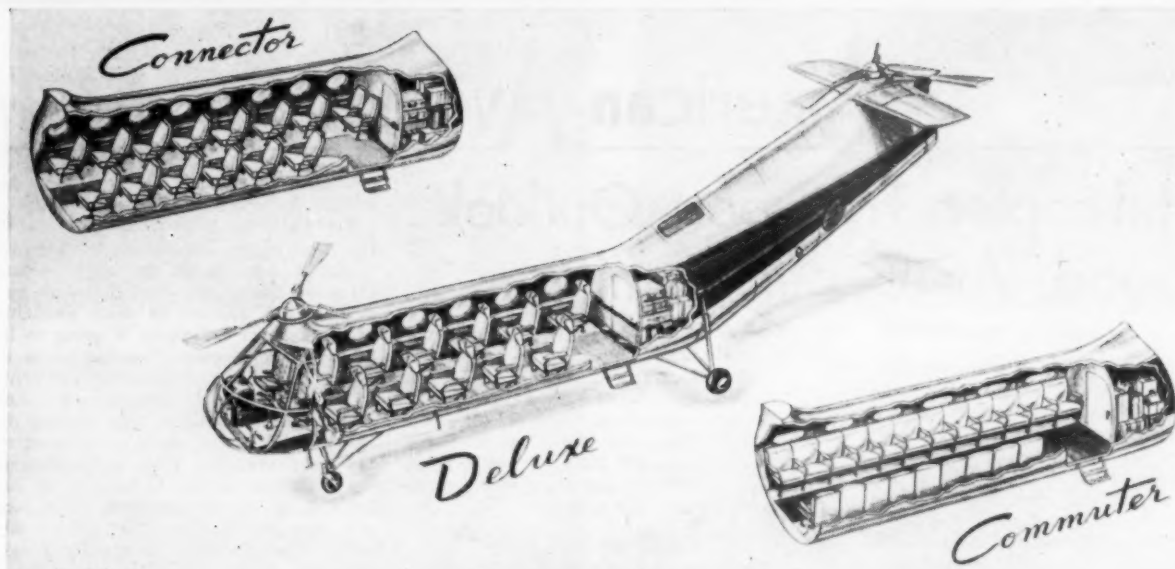
Piasecki will offer two other basic versions—an 11-passenger de-luxe plane and a 15-passenger model, although, obviously, the operator can select any intermediate number of seats. The cabin of the HRP-2 is 20 feet long, five and one-half feet wide and as high as it is wide. Total cabin space is 615 cubic ft.

In the rescue version competing for the Air Force business, Piasecki has maintained the basic HRP-2 configuration with the substitution of a more powerful engine, the Wright R-1820 instead of the Pratt-Whitney R-1340. Presumably, the commercial operator could take his choice of these two power plants to get the best operating economy, depending on the number of seats and the gross weight of the plane.

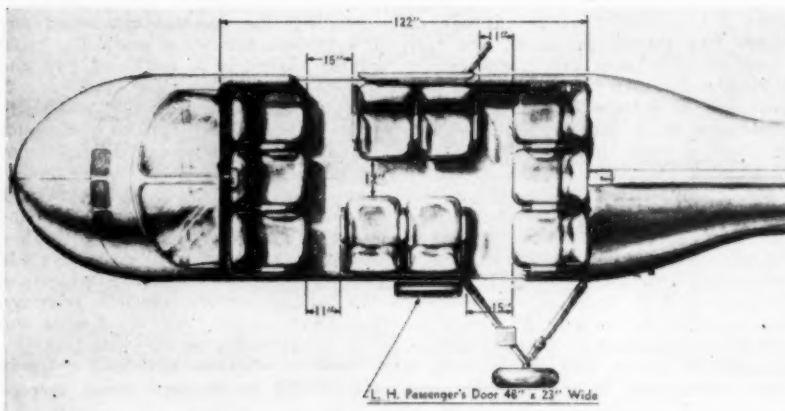
Sikorsky Aircraft Division's entry in the Arctic rescue-commercial sweep-



PIASECKI'S PD-22, rescue-commercial version of the HRP-2 (above) can seat as many as 21 passengers in a high-density version.



HERE ARE the three basic seating arrangements for the Piasecki passenger helicopter. Above, the "Connector," for airport-city work, 15 seats, not counting the pilots; center, the "DeLuxe," with an airline interior, 11 seats; lower right, the "Commuter," for short-haul suburb-city commutation work, 21 seats.



THE DRAWING above shows how the ten passengers in the Sikorsky H-19 passenger version would be arranged.



THIS PHOTO illustrates the engine accessibility of the Sikorsky H-19. The engine, hinged at the bottom, may be swung over to a horizontal position for maintenance ease.

stakes is the 10-passenger H-19, a single-main-rotor, larger development of the familiar Sikorsky H-5, which has been in military service for some time. The main rotor is three-bladed, all-metal and 53 feet in diameter. Pilot and co-pilot are directly over the engine.

The cabin, located below the pilots and behind the engine, is 10 feet long, five and one-half feet wide and six feet high, with a total cabin space of 363 cubic feet. In the rescue version it can carry eight litters instead of the 10 passenger seats. Sikorsky will probably offer only one passenger seating arrangement, since less than 10 seats would be unattractive to the operator, while cabin and center of gravity limitations prevent expansion. It is conceivable, though, that Sikorsky could build a larger plane.

Accessible Engine

An important consideration in the Sikorsky entry is maintenance accessibility. This is provided by splitting the nose section, where the engine is housed, by two clamshell doors. With the doors ajar, two-thirds of the engine is exposed.

The H-19 has been flying since November 21 and at this writing has compiled 20-plus hours of flight time. Sikorsky is building five of the ships, costing \$1,000,820, for the Air Force.

Design gross weight of the H-19 is 7,009 pounds. The overall length of the plane is 39 feet six inches; height is 12 feet four inches. Estimated performance figures are: top speed, over 100 miles per hour; cruising speed, 85 miles per hour; useful load, 2,962 pounds; and range, about 280 miles.

Bell Aircraft Corp. calls its passenger version the "Feeder-Liner." It is an adaptation of the basic design of Bell's YH-12 Air Force helicopter. Powered

by a Pratt & Whitney R-1340 600 horsepower engine, the Bell is probably the fastest of the larger helicopters, having once flown at a speed of 133.9 mph.

The YH-12 has a single, two-bladed main rotor 47 feet in diameter. Gross weight is 5,600 pounds, with a maximum useful load of 1,630 pounds. Service ceiling is 12,000 feet; range about 300 miles.

In the "Feeder-Liner" provision has been made for the installation of a more powerful engine, which would probably up the useful load. The cabin would also be widened, and the pointed nose shown in the picture on this page would be rounded off, permitting the pilots' seats to be moved forward, thereby lengthening the cabin. A drawing of the seating arrangement of the Bell plane shows three rows of seats, each with its own access door. This arrangement allows for 12 passengers and one pilot; the drawing shows five passengers seated in the rear row, four in the middle row, and three passengers and the pilot in the front row.

McDonnell's New Model

The fourth competitor is the **McDonnell Model 65**, an extensively redesigned version of the Navy XHJD-1, a large, twin-engine, twin-rotor ship. The Model 65 will have a new, all-metal fuselage, larger rotors and more powerful engines than the prototype XHJD-1, which has 46-foot rotors and Pratt & Whitney R-985 Wasp Junior engines. Gross weight of the prototype is over 11,000 pounds and the Model 65 will be even heavier.

McDonnell has said nothing of its commercial plans and it is difficult to estimate seating capacity of its craft. The XHJD-1 was designed to carry up to 11 passengers; the larger Model 65, presumably, can carry more. However, it is doubtful that it could match Piasecki's 21-seats. Although, like the Piasecki PD-22, as the rescue-commercial version is known, the Model 65 has two rotors, they are located left and right, rather than fore and aft, mounted on stub wings protruding from the fuselage. Thus the plane's lift is disposed laterally rather than longitudinally, and the Model 65 does not enjoy the center of gravity advantages inherent in the Piasecki tandem-rotor design. This c.g. limit (only five inches in the XHJD-1) may impose a limitation on the number of seats.

There's the line-up. In about a week, an Air Force evaluation board, plus representatives of the Army Field Forces and the Navy, will meet in Washington and make a preliminary decision, with the final decision due in January. Shortly thereafter one potential passenger helicopter will be in production. Just how soon planes can be made available to commercial operators is hard to determine. It will be largely dependent on how many plane deliveries the Air Force insists upon before commercial orders can be sandwiched in. But at any rate, the Arctic rescue evaluation has changed the passenger helicopter from a vague future possibility to an imminent practicality.



THIS IS the Sikorsky commercial possibility, the H-19 or S-55. The passenger cabin is marked by the two windows above the insignia.



HERE IS the Bell YH-12, from which came the basic design for Bell's 12-passenger "Feeder-Liner." The inset shows the cabin modifications and seating arrangement of the "Feeder-Liner."



THE MODEL 65, a larger, more powerful and extensively modified version of the McDonnell XHJD-1 helicopter shown here would be McDonnell's commercial offering.

Allison's XT-40 Turbo-Prop

Better Than Britain's Best

For quite some time the American press and public have been harboring the impression that our propulsion engineers are running a poor second to the British in the turbine-propeller field, an impression fostered by our more stringent military security regulations, which forced American engine manufacturers to keep their products under wraps while the British poured out reams of data on their developments in this field.

Now, however, the Navy has lifted the lid of security on one of its more promising turbo-prop engines, and we find, surprisingly, that we not only are *not* a poor second in the turbo-prop race, but apparently are well ahead of our British cousins.

The engine in question is the Navy's XT-40, developed and manufactured by the Allison Division of General Motors Corp. The XT-40 has a rating of 5,100 shaft horsepower in addition to 1,600 pounds of thrust for a combined power equivalent of 5,500 horsepower; yet it weighs only 2,618 pounds and has a specific fuel consumption rate in a class with the larger piston engines in operation today (.63 lbs. per horsepower per hour, static, sea level).

Can't Match It

The British actually have nothing to match the XT-40. Their most advanced turbo-props, the Rolls-Royce Dart and the Armstrong Siddeley Mamba develop only about one-fifth the power output of the XT-40. This is admittedly not a fair comparison, since the XT-40 is a double-turbine unit, while the Mamba and the Dart are single units.

Armstrong Siddeley also has a double unit, the Double Mamba, which fares no better by comparison with the XT-40. The Double Mamba develops 2,540 shaft horsepower plus 770 pounds of thrust. It weighs 2,000 pounds; thus it produces less than one and one-half horsepower per pound of weight, compared to more than two for the XT-40. Moreover, the Double Mamba has a specific fuel consumption rate of .89 pounds per horsepower per hour, considerably higher than that of the XT-40.

The Python, a later Armstrong Siddeley development, weighs 3,150 pounds, develops 3,670 horsepower plus 1,150 pounds of thrust, and has a specific fuel consumption rate of .845. Again the weight/horsepower ratio cannot compare with that of the Allison turbo-prop and the fuel burning rate is much higher. The Bristol Proteus suffers in a similar comparison.

From the standpoint of power, the British Coupled Proteus, a double-version of the Proteus, stands up well against the XT-40, having a take-off

rating of about 7,000 horsepower. The Coupled Proteus has a heavy weight disadvantage, however, weighing 7,180 pounds. But this not a fair comparison for the American engine, since it has actually been installed in an airplane (Convair's XP5Y-1, Navy flying boat), while the Coupled Proteus is still in an early construction stage and its performance figures are estimates, not guarantees.

Other Still Classified

Allison has another, still classified, turbo-prop project, farther along in development than the Coupled Proteus, with a much greater power rating, a lower fuel consumption rate, and weighing considerably less.

As stated before, the XT-40 is actually two turbine units mounted together. The single unit, weighing about 700 pounds and developing 2,750 horsepower, is known as the XT-38, (company designation Model 501), a small axial-flow, 17-stage compressor turbine unit. In the XT-40 (company designation Model 500) the two single units are connected so that, in effect, they form a single power plant, but each turbine may be operated separately.

The two units are connected by extension shafts to a common gear box with a two-stage reduction system. The standard propeller for the XT-40 is a three-bladed Aeroproducts operating at

a 15.7 to 1 reduction ratio. In the Convair flying boat installation two contra-rotating propellers are used. Either power section can drive the two propellers by itself. Maximum fuel economy may be obtained by cutting out one of the two power sections and operating at reduced power for cruising.

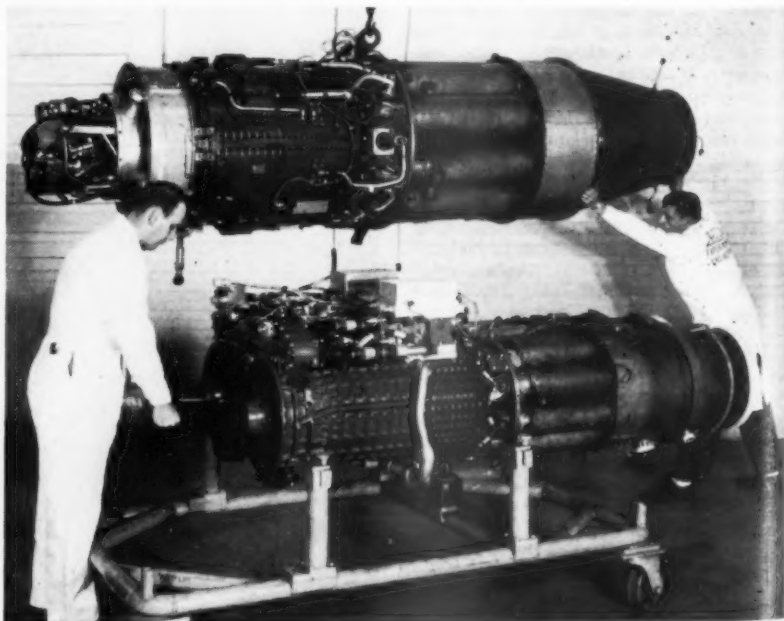
Engine accessories are driven from each individual unit, while aircraft accessories are driven from the gear box, so that either unit can supply the power while the other is cut out. The starting system is an AiResearch turbine starter. There are also provisions for tapping the compressor for pressurization.

Commercial Attraction

The Allison turbo-props have aroused considerable interest in both commercial and military fields. The low installation weight, coupled with high horsepower, is attractive to commercial operators, since it affords extra payload opportunity. Convair has worked up a detailed study of a T-38 installation in the Convair-Liner and has proposed that the Air Force try it in the military version of the Convair, the T-29 navigation trainer. The T-38 is also being considered for installation in the Martin 2-0-2.

In the military field, as mentioned before, the XT-40 will be used to power the Navy's latest flying boat, the Convair XP5Y-1, which is now in the water at San Diego where the engines are being installed. The XT-40 is also slated for installation in a new Douglas Navy attack bomber, the XA2D-1, and North American's new XA2J-1, also a Navy attack bomber.

It is also being considered for Douglas' huge C-124, Air Force heavy transport.



THIS PHOTO shows clearly the size advantage of the Allison XT-40 turbo-prop engine. Here it is compared to an Allison J-35 jet engine. The XT-40, although it has two turbines, each developing 2,750 horsepower, is no wider than the J-35 and its vertical diameter is considerably less.

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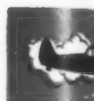
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Better Ground Handling Held Major Air Cargo Need

By WILLIAM D. PERREAULT

During its annual meeting in New York recently, the American Society of Mechanical Engineers reviewed problems relating to air cargo improvements and how they might be overcome. On the program were some experts in the field: Robert Stark, presenting a paper prepared by EAL chief engineer Charles Froesch, W. W. Davies, director of engineering for United Air Lines; R. Dixon Speas, special assistant to the president of American Airlines, Major General W. H. Tunner, MATS deputy commander for operations; and R. L. Hackney, air cargo specialist with Lockheed Aircraft Corp.

The Bottleneck

Speas expressed the viewpoint that the real problem with air cargo today is in the ground handling procedures, not the flight aspects. In one airline's operation during November of this year, 85% of the in-transit time for shipments destined for Detroit from New York was spent in ground handling; 81% was ground handling if the shipment was enroute from New York to Chicago; 67% for New York-Los Angeles, if scheduled for second-morning delivery, or 42% if scheduled for first-morning delivery in LA. The place for improvement is in ground handling, Speas stated.

Another important factor: the time lost in ground handling directly affects aircraft utilization. While studies of specific air freight operations by seven airlines show that air freight shipments were ready for pickup anywhere between 3:00 and 6:30 pm, depending on the area, the average cargo flight does not originate until around midnight.

As a result daily passenger aircraft utilization ranged between 31% and 147% better than related cargo aircraft utilization factors.

Ground handling costs for cargo moving 250 miles by air are 50% of total air freight operation costs. At a 500-mile range it represents about 33% of total costs, at 1,000 mile range some 20% and so on until at 2,500 miles it is 10% of total air freight operation costs.

Safer by Air

Air shipment provides inherently safer handling for goods. Studies made by the National Safe Transit Committee prove this (see cut). Yet the record, said Speas, indicates "that more than 95% of damages and losses sustained in air cargo shipments today are experienced in ground handling functions." One airline is currently paying less than 1.5% of total revenues in damages and losses.

What are the answers to these problems. Drawing on his experience, Speas offered some suggestions:

(1) **Cargo flow studies and methods analysis**, continuing cargo flow studies to evaluate potential for improvement within each phase of ground handling.

(2) **Pickup and delivery**. This represents 48% of ground handling time and 38% of total in-transit time. New procedures such as the two-way radio dispatch system used by the Willett Co. in Chicago, must be developed.

(3) **Aircraft utilization**. Depreciation costs are 10-20% of total operating

Daily Utilization

U. S. DOMESTIC AIRLINES—1949

	Daily Passenger Aircraft Utilization	Daily Cargo Aircraft Utilization	Passenger Above Cargo
Airline A	9:39	6:30	47%
Airline B	7:46	5:54	31%
Airline C	All Freight	6:51	—
Airline D	6:39	4:39	43%
Airline E	7:36	4:31	69%
Airline F	All Freight	4:30	—
Airline G	8:24	3:23	147%

costs. Transcontinental flights permit round-the-clock operations but shorter hauls must be originated earlier so that round trips will be possible, paralleling passenger aircraft utilization.

(4) **Cargo terminal design**. Mechanization of a cargo terminal building is of extreme importance. The important consideration is to mold building design

and loading equipment requirements to meet contemplated operating conditions with minimum cost and maximum speed of operations.

(5) **Paper work**. This must be simplified. In many instances there is less reason for originating paper work to accomplish cargo security and proper flow than there is in originating paper work to route cargo from one side of a terminal building to the other. Information can often be given more effectively and economically by manifest records. Practices of other transportation agencies handling similar work should be studied for ideas.

(6) **Manpower utilization**. Spread certain work requirements away from peak time demands. Partial shifts and use of personnel (such as bookkeepers) specializing in related fields during regular employment offer some possibility, careful selection and comprehensive training of personnel is important to accounting and billing as well as every other phase.

(7) **Cargo security**. Ground handling procedures must be developed and enforced. Mottoes such as "Deliberate Kicking of Passengers or Dropping of Cargo are Grounds for Dismissal" help.

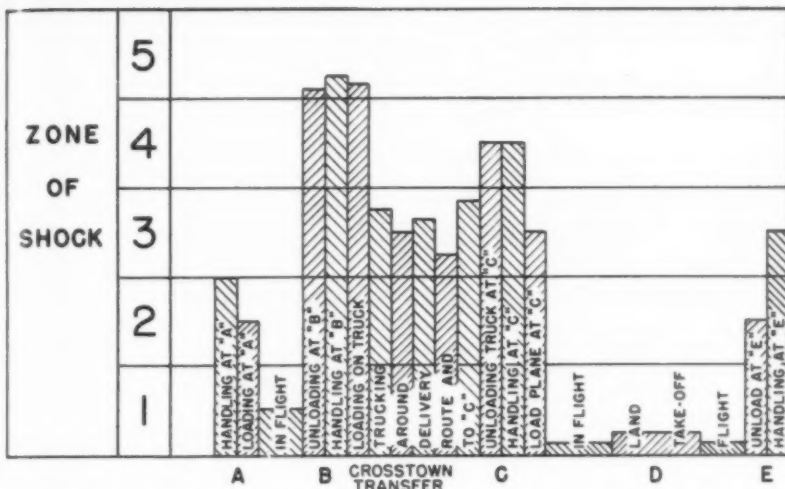
The Cargo Aircraft

Davies ventured that two sizes of aircraft will probably be desired: one with a payload of 10-20 thousand pounds and a speed probably over 300 mph and another with 20-30 thousand pounds payload and a speed of 400 mph or better at normal cruising power. The smaller aircraft would have a useable range of 500-1,000 miles and the larger ship 1,000 to 3,000 miles range. These ships must be capable of operating into present-day airports and preferably, to permit "ample pioneering" of air cargo and air freight, they should be capable of getting into smaller fields, even if it means operating under limited take-off and landing restrictions during the exploitation stage.

Because the aircraft should be capable



THIS MODEL shows the air freight "terminal of tomorrow" as visualized by L. R. Hackney, air cargo sales engineer for Lockheed Aircraft Corp. The completely mechanized terminal would cost about \$250,000 and be capable of handling up to 80 tons of freight per hour. The far side of the terminal incorporates the truck docks. The overhead conveyor keeps trucks moving continuously from the truck docks to the airplane loading platforms. Note that the ramps to the airplane are mobile. For complete story see page 53 this issue.



USING RECORDING "bugs" buried in inconspicuous packages which are shipped around the country at random, the National Safe Transit Committee found that shocks incurred during flight, including take off and landing, are very small as compared to any other type movement.

of flying at high altitudes for best cruising operations and economy, Davies feels that cabin air conditioning and pressurization should be provided. Since, for some time, the aircraft will probably have to handle passengers as well as cargo, under some instances, and the cockpit will have to be pressurized anyway, the fuselage should not be neglected.

Davies felt that since speed is the "primary asset of air transportation" cargo aircraft must be designed with the "highest possible speed commensurate with economy. Speed is not only a function of aerodynamics and engine power; it is a function of ground and mechanical delays, weather delays, traffic delays, loading delays and such."

Common Cry

But most of all, Davies pleaded for simplicity—in the aircraft itself, in tie-down equipment, attachments for the tie-down equipment, door opening and closing mechanisms, air conditioning, landing gears, engine controls, etc. It is a key job for the airlines, airframe and accessory manufacturers.

One of Davies' best-received comments was that air cargo should turn to accepted standards in equipment rather than specially-designed items. "Actually everything should be left on the ground that is possible to leave on the ground," he stated. Design the airplane to use "standard types of securing equipment, standard trucks for loading and unloading, standard boxes and packaging, at least, those standards used by other modes of transportation."

National Defense

In the military application of air cargo General Tunner cited high speed as secondary to reliability, economy, long service life, etc. A speed of 250 mph is adequate in the immediate future, he indicated. The aircraft should be a "conventional four-engine type capable

of laying down 25 tons after a 3,000-mile flight or 5,000 mile range with no load." A density factor of 10 lbs. per cubic foot to accommodate this load is desirable. It should have a landing gear which distributes aircraft weight so that a 100-ton aircraft can be operated from present-day runways and adequate power should be provided to operate safely using runways of 6,000-foot length.

"I think," said Tunner, "it is safe to estimate that in a national emergency the requirement for ten-ton capacity aircraft, capable of flying the ocean, would be far more than are now available. I believe the key to having an adequate number of transport-type aircraft in the event of war is in having a large scale commercial air cargo business in the U. S. as well as a similar air passenger business."

Air Cargo Day was a major success as measured in the stimulation it provided toward doing something about these shortcomings in the fast-growing field of air cargo. For additional information on the tour of Newark Airport's cargo handling terminals, aircraft display and L. R. Hackney's well-received paper on the design considerations for a major air cargo terminal, see page 53 of this issue.

More Pay for AOA Flight Engineers

A recent arbitration award which increased the minimum salary for flight engineers of American Overseas Airlines from \$50 to \$85 a month is expected to set a pattern for future wage negotiations throughout the industry. The raise is confined to flight engineers on Lockheed Constellations and Boeing Stratocruisers. Pay of assistant flight engineers was increased proportionally.

In making the award, the arbitration board consisting of Whitley P. McCoy,

Bernard Cushman and Emil F. Jarz stated the increases were being given solely on the consideration that present pay of flight engineers and assistant flight engineers bears an inequitable relationship to that of the pilots and that the differing duties and responsibilities on different types of planes should be recognized by differing rates of pay. Flight personnel involved are members of Flight Engineers International Association.

Slightly higher rates, retroactive for the period of June 1 to November 30, 1949, also were allowed with the new minimum rates for flight engineers from December 1, 1949, through May 31, 1950 set forth in the accompanying table:

Months of Service as Flight Engineer	DC-4 or 72,000 pounds or under (same as existing rate)	Constellation and/or 72,000-110,000 pounds gross weight	Boeing and/or 110,000-155,000 pounds gross weight
0-6	\$450	\$500	\$535
7-12	475	525	560
13-18	500	550	585
19-24	525	575	610
25-30	550	600	635
31-36	575	625	660
37-42	600	650	685
43-48	625	675	710
After 48	650	700	735

Assistant flight engineers are to be paid a minimum monthly salary for the period December 1, 1949, through May 31, 1950 as follows:

Months of Service as Assistant Flight Engineer	Constellation and/or 72,000-110,000 pounds gross weight	Boeing and/or 110,000 to 155,000 pounds gross weight
0-6	\$400	\$435
7-12	425	460
13-18	450	485
19-24	475	510
25-30	500	535

Union Seeks New Benefits For PAA and AOA Employees

A shorter work week, an across-the-board wage increase of 20c per hour, and improved pensions for 9,000 ground force employees of American Airlines and Pan American Airways are the major demands in new contracts submitted to the two carriers by the Transport Workers Union—CIO. James Horst, director of TWU's air transport division, said present contracts will expire December 31.

The union said the present average wage rates for ground workers were \$1.72 an hour for American and \$1.65 an hour for PAA. In addition to the straight 20c an hour increase, the union will ask for an increase in the swing shift differential from present seven cents to 10 cents an hour, and an increase in the midnight shift from 10c to 20c an hour differential.

A reduction in the work week from 40 hours to 35, with no reduction in weekly take-home pay, will be sought, along with a demand for three weeks' vacation after five years of service and four weeks after 10 years, instead of the present three weeks after 10 years.

'Fly All the Way' Benefits Local Operators and Airlines

By KEITH SAUNDERS

"Fly all the way" will soon be a suitable slogan for use by the air transport industry in this country.

Steps to carry out the long discussed coordination of facilities and services of the certificated scheduled air carriers and those of the small irregular air carriers were initiated this month, after the Air Traffic Conference of the Air Transport Association had approved the plan at its annual meeting in Chicago.

The program had previously been approved at the annual convention of the National Aviation Trades Association, which will now sponsor an Air Charter and Taxi Conference to work with the Air Traffic Conference of the scheduled carriers.

Joseph Garside, president and general manager of Wiggins Airways, and Harry Meixell, outgoing executive director of the NATA, will set up the Conference, which eventually may encompass most of the 2,445 holders of letters of registration as small irregular air carriers.

A big question at present is how NATA members will work with Meixell, who seems slated to be executive director of the new Conference. It is well known that heavy pressure from certain state chapters led to his resignation as active head of NATA.

Object of the joint program is to make it possible for the air traveler to fly all the way from point of origin to his destination instead of using air service only to or from the nearest airline route point and using rail and bus transportation for the remainder of his journey.

Here, briefly, is how the thing will work:

Upon a showing of adequate liability insurance, safety standards and general dependability, any CAB-approved small irregular air carrier may become a member of the Air Charter and Taxi Conference, and all such members will supply the Air Traffic Conference with lists of the off-airline points they can adequately serve and their charter rates to and from such points. The ATC, in turn, will supply members of the Charter Conference with their schedules and rates.

Once the thing has been set up, a person can walk into any airline office in the country and buy a ticket to Warrenton, Va., which is not on an airline route. Upon getting off the airliner at Washington National Airport, closest route point to Warrenton, he would be met by a member of the Charter Conference who would then fly him on to Warrenton in a Beechcraft, a Ryan Navion, a Cessna or some other plane of the family or executive type.

Conversely, if an individual in Warrenton wished to go to Chicago, Dallas

or Miami, he could go to the Charter Conference member at his local airport and buy a ticket that would take him all the way by air, the local operator flying him to Washington to connect with a scheduled airline.

The ATC-NATA program will bring safe and reliable air service to literally hundreds of communities that now have airports and want air service but stand only a slim chance of becoming a certificated airline route point.

Members of the Air Charter and Taxi Conference will (1) serve as charter operators in utilizing their planes to feed traffic into and take traffic away from the airports of regular scheduled airline stops; and (2) serve as recognized representatives of the members of the Air Traffic Conference of America in promoting traffic at off-airline points.

The Charter Conference members, of course, will be required to comply with the same policies and procedures and meet the same standards which the scheduled airlines pursue in their relations to the public and each other.

The small irregulars and major sched-

uled airlines will share equal benefits, according to M. F. Redfern, executive secretary of the Air Traffic Conference.

"Transportation statistics fairly well prove that for every individual departing from any community a passenger is counted going to that community," said Redfern. "Thus, the small irregular carrier will be fed in proportion to his contribution to outgoing traffic which he delivers to a scheduled carrier. While each such small irregular in his local community becomes the soliciting representative of every scheduled carrier in the United States and of every other small irregular, he in turn will be represented by a solicitor in every city served by a scheduled carrier and in every community served by another small irregular."

Redfern is enthusiastic about the tieup and feels it will tap a rich new market.

Most of the small irregulars have been performing such services, but their efforts have been widely scattered and operated on a strictly individual basis. Now their efforts will be coordinated, not only with one another but with every scheduled airline. They will have standards on which the traveling public can rely. Extensive advertising programs on the part of members of both Conferences will gain for the service a recognition it has never before enjoyed.

"Fly all the way" will be the watchword of the domestic air transport industry in this program next year. And if the program clicks, it may well contribute to record passenger traffic for the scheduled airlines, the financial salvation of hundreds of small irregular carriers, and a boost to the lightplane industry.

If it isn't watched closely, and if the small irregulars do not conscientiously live up to the standards expected of them, the program could boomerang to the detriment of air transport.

The Air Traffic Conference recognizes this but feels that the possible advantages are so great as to warrant taking the step.

New 'Super' Ryan Navion Using 260 hp Lycoming

Ryan Aeronautical Co. has announced the "Super" Ryan Navion, a new version of the Navion powered by a 260-horsepower Lycoming GO-435-C2 engine. With the new power, the "Super" Navion will take off with a ground run of 400 feet and clear a 50-ft. obstacle in 770 feet.

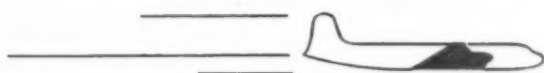
With the 20 gallons auxiliary fuel supply, which is standard equipment on the "Super," normal range of the ship is 640 miles and at maximum economy conditions this can reach 900 miles. Approaching over a 50-foot obstacle, the Navion requires only 875 feet to the end of the landing roll.

The "Super" Navion, which will be in production within a few months, is scheduled to sell for under \$14,000 and will be a companion model to the present day 205-horsepower Navion which will continue in production.

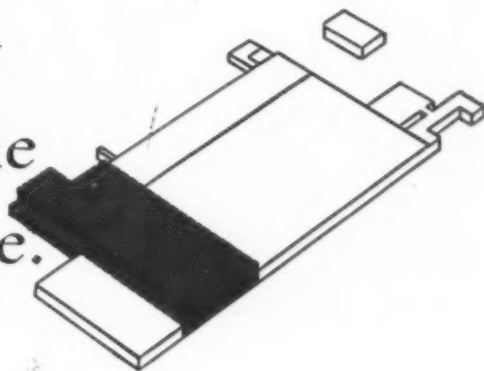


New Control—Shown inspecting the new Strato-Cruise control, now available for use with standard model F200 Aeromatic propellers, are Jesse Jones (left), service manager for Aeromatic Propellers; George Levis (right), Aeromatic sales representative and H. G. Erickson, chief engineer with Temco. The new unit, recently approved by CAA, makes it possible for the pilot to override the automatic action of the propeller to meet the requirements of cruising altitudes above the normal operation range of the system.

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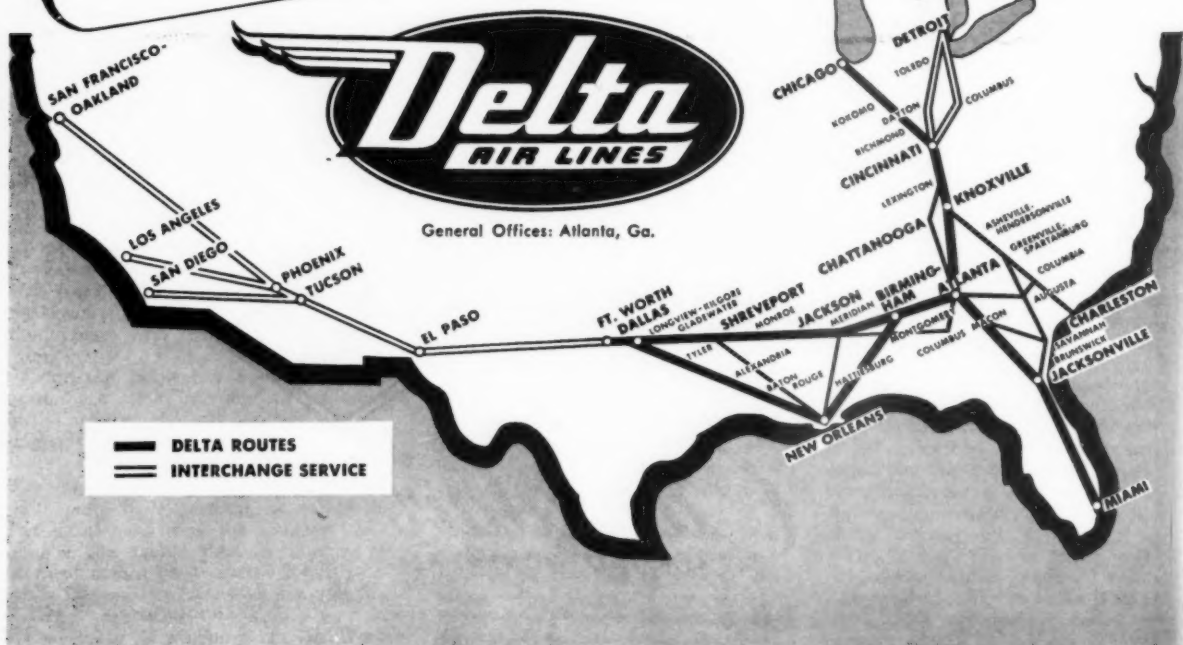
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to and from intermediate points.



3-Level Atlantic Fares Set By IATA Traffic Meeting

By ERIC BRAMLEY

Establishment of a three-fare pattern across the Atlantic, and announcement of a 15-day winter round-trip excursion fare from the U. S. to European gateways at a rate of 10% more than the one-way tariff, highlighted the recent meeting of the International Air Transport Association's traffic conferences in Mexico City.

Also significant was the fact that the 69 IATA members were able to preserve the world rate structure from the effects of devaluation, and that a "closed rate" situation will exist in parts of South America for the first time.

Catching most of the headlines was the 15-day excursion, which will enable a passenger to travel from New York to London and return for \$385, only 10% more than the standard \$350 one-way fare. Similar fares will exist to the other gateways. If approved by governments, they will be effective from Jan. 1 to Mar. 15, 1950.

Off-Season Experiment

It should be remembered, however, that this excursion fare is in the nature of an experiment, a "one-time shot," to see if off-season business can be built up. If it is ever renewed, it will require further traffic conference action.

The three-fare pattern established, regardless of whether the 15-day fare is renewed for 1951, consists of an on-season round-trip, now \$630 to London, a 60-day off-season round-trip, now \$466.70, and an on-season-off-season round-trip, which will be halfway between the two. The latter is new, and will enable a passenger to travel one way in the on season and return in the off season. He would pay half of \$630 and half of \$466.70.

Pan American Airways' well-known proposal for year-round Atlantic tourist class service was not pushed at IATA. The reason was a closed conference which J. T. Trippe, PAA president, had with the Civil Aeronautics Board shortly before the IATA sessions. Trippe had decided not to present the proposal again unless he could first get an indication of CAB approval. After hearing his presentation, however, CAB turned him down, although it indicated willingness to okay tourist service for everyone during the first three months of the year, provided no line ran more than two trips weekly.

PAA Defers Proposal

Restricting the service to three months was not acceptable to PAA, however, and the company informed IATA members that it would not press the proposal at that time but intended to do

so in the not-too-distant future. The fare and one-tenth plan was backed principally by TWA. It will probably enable that carrier to offer a round-trip fare to Rome of under \$500 for the first 10 weeks of Holy Year.

The international fare situation, which became snarled following devaluation of the pound sterling, was unraveled at the meeting. Fares for 1950 will be held to existing levels in hard currency areas and increased about 10% in soft currency countries.

The different shades of devaluation in Europe will result in some directional tariffs. Switzerland, for example, did not devalue its currency, and trips out of the country will cost more than incoming trips. A similar situation exists with Poland.

Currency Areas Defined

The meeting decided that North and South America, the trans-Atlantic and trans-Pacific routes are dollar areas, while the rest of the world, from the European gateways east to the Pacific are soft currency areas.

IATA also took a step toward straightening out that chaotic South American fare situation. Rates and fares between points in five countries, Argentina, Brazil, Chile, Paraguay and Uruguay, will now be worked out in IATA conferences and covered by resolutions.

Excursion rates over the South Atlantic, off-season rates from Australia and New Zealand to Singapore to Rome, "early bird" services from Eire to the United Kingdom, and special discounts for inclusive tours within Europe were also approved.

Cargo rates in 1950 will generally follow the same trend of adjustments as passenger fares. "More favorable break-points for bulk commodity rates and other similar devices will make air cargo of increasingly greater value to the shipper during 1950," E. O. Cocke, TWA's vice president-sales and conference chairman, said.

Committee Named

A special committee was named to study differential passenger fares and report at the next conference, which will be held in May, probably in Europe.

The conferences also:

1. Approved a complete standard international procedure for interline reservations, when an agent of one airline books space for passengers on planes of other companies. The new system sets up definitions, forms and procedures.

2. Agreed upon a universal exchange order for use when passengers turn in their tickets. It will be put into use for interline traffic by January 1, 1951, and for all traffic as soon thereafter as possible.

3. Refined and improved the standard airline ticket already in use. A committee is studying proposals to bring U. S. domestic tickets and international tickets into complete coordination.

4. Revised and brought up to date the two-letter code symbols used to designate company names on flight and line numbers.

5. Liberalized baggage allowances for passengers in certain areas.

6. Agreed on arrangements to set standard time allowances for flight connections on airlines throughout the world. Special committees at all connecting points will work out standard allowances fitted to local conditions, and worldwide lists will be compiled and circulated by IATA's head office.

7. Agreed that when an airline delivers a passenger to a connecting point too late to catch the onward service under this system of time allowances, it will become responsible for arranging alternative connections.



French Transport—The largest of France's land planes, the SE 2010 Armagnac, has now completed 100 hours of test flying and the first deliveries on the 15-unit order for Air France are expected during 1950. The Armagnac has a gross weight of 170,000 lbs., wing span of 160 ft., length of 130 ft. and height of 44 ft. The 80-passenger Armagnac, which is powered by four Pratt and Whitney R-4360 engines, has a fuel capacity of 6,908 gallons in eight wing tanks. Cruising speed at 20,000-ft. altitude is 276 mph, maximum speed is 335 mph.

California Coach Services Lead to State Rights Fight

By FRED HUNTER

The issue of state rights in air transportation appears to be headed for an airing on several fronts in California.

What's legal and how come might be an appropriate, if facetious, title of a hearing which the CAB apparently intends to schedule. Evidence of this intention came to light when three CAB investigators abruptly appeared on the scene in Los Angeles armed with subpoenas to examine the books and records of four of the intrastate carriers along with their four affiliated airlines.

The intrastate controversy is said to be on the agenda of the California State Public Utilities Commission reported getting ready to move again on its tariff investigation which got sidetracked after a fast start last spring.

And maybe the courts will get into it as a result of a damage suit three of the intrastate carriers have filed in superior court in Los Angeles against Western Air Lines. Western also is on the receiving end of a formal complaint to the CAB by United Air Lines which accuses it of unfair competition in connection with the operations of Western Air Lines of California.

Three-Cent Airline

Western Air Lines of California is a unique creation and, as such, seems to have seized the center of the stage in California's somewhat exciting intrastate drama. For one thing, Western of California, seems to be proof of the pudding that under the right circumstances there's money in the air coach business even at 3.04 cents per mile, which is so close to C. R. Smith's "Three-Cent Airline" rate that even a banker would allow it as a reasonable tolerance. The trick is in finding "the right circumstances."

It was Col. C. C. Sherman who discovered the high-density Los Angeles-San Francisco route represented just the right circumstances. Operating a large irregular, Airline Transport Carriers, Sherman organized California Central Airlines as a California intrastate company and on January 1 of this year started flying between Lockheed Air Terminal at Burbank and San Francisco for \$9.99 plus tax. That started it. Half a dozen other intrastate companies were incorporated, but it was when Western Air Lines of California entered the lists that the fireworks were touched off.

Since it started on August 15, Western of California's 73-passenger DC-4's have had a better than 80% load factor and the intrastate carrier has carried more than 40,000 passengers at a fare of \$9.95 plus tax. There are no public figures, but there's no doubt that Western of California has been and is a profitable operation just as California Central also has been and is.

The CAB investigation revolved around the relationship of the four intrastate carriers with the four carriers with which they were affiliated. Thus the investigation of Western Air Lines of California also concerned Western Air Lines. Similarly, the records of California Central were examined along with the records of Airline Transport Carriers. Arrow Airways was linked with California Arrow and Robin Airlines with Robin Airways, WAL is, of course, a certificated carrier. Airline Transport Carriers, Arrow Airways and Robin Airlines are large irregular carriers.

In pursuing this line of investigation, the CAB may decide it has regulatory powers over intrastate carriers which interlock or are otherwise connected with other carriers that cross state borders. The investigation was not extended to the one intrastate carrier which has no affiliation with another carrier, Pacific Southwest, which flies between San Diego and San Francisco.

Sued for \$350,000

Neither was Pacific Southwest a party to the court action taken by the other intrastate carriers in Los Angeles. This was a suit in which California Central seeks \$200,000 in damages, California Arrow \$100,000 and Robin Airways \$50,000, or a total of \$350,000.

Named as defendants were Western Air Lines and its president, Terrell C. Drinkwater; Western Air Lines of Cali-

fornia and its directors, Milo V. Olson, Arthur C. Jones, Jr. and Robert L. Meyers.

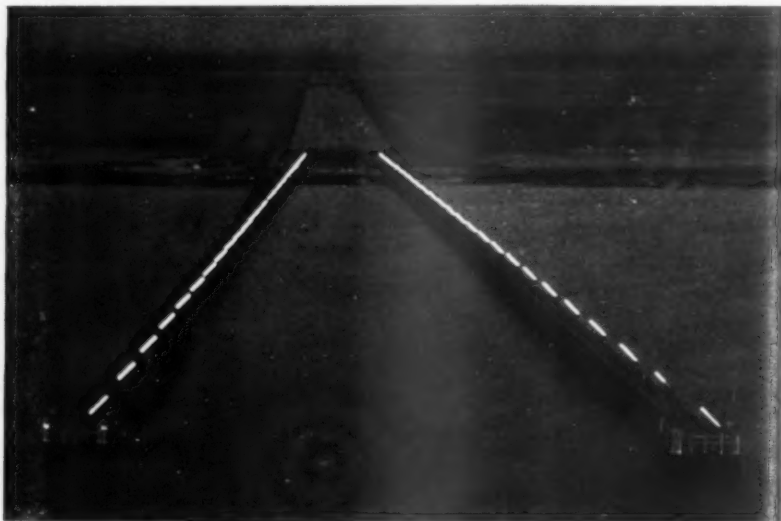
The suit charges Western and the other defendants engaged in a conspiracy to drive the other carriers out of business in violation of the state's anti-trust laws. The complaint charged Western of California is a "paper" organization set up by Western Air Lines and its attorneys, Guthrie, Darling and Shattuck, and that the company is headed by Milo V. Olson, who is a member of the law firm.

U. S. to Seek Interim Deal On N. Y.-Mexico City Route

A recent confidential letter from CAB Chairman Joseph J. O'Connell to the presidents of the airlines holding certificates into Mexico has informed them that the U. S. intends to try for an interim arrangement with Mexico that will get Eastern Air Lines and a Mexican carrier into operation from Mexico City to New York, but which will postpone action on Western Air Lines and Braniff Airways.

The CAB's Latin American decision issued in May, 1946, awarded Mexican routes to EAL, WAL and Braniff, but every attempt to work out a bilateral agreement with Mexico and get the carriers into operation has failed. American Airlines and Pan American Airways presently fly into Mexico.

O'Connell's letter, certain to arouse the opposition of several carriers, asserted that in addition to reciprocal service on Mexico City-New Orleans-New York, the U. S. would offer Aerovias Guest, Mexican company a traffic stop



Commercial Installation— This night view of the slope line lights recently commissioned at New York International Airport illustrates the lighting configuration and mounting provisions. While trial installations of the CAA developed slope line lights have been under test at Arcata, Calif., and Indianapolis, Ind., this is the first commercial installation. The lights were installed at CAA's request and CAA is paying half of the \$650,000 cost of installing the special mounting pier.

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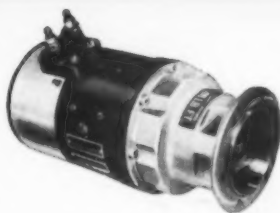
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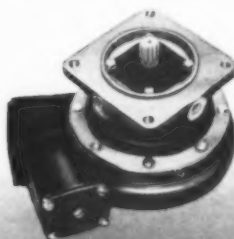
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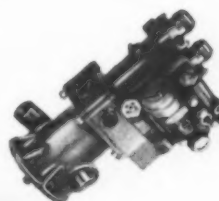
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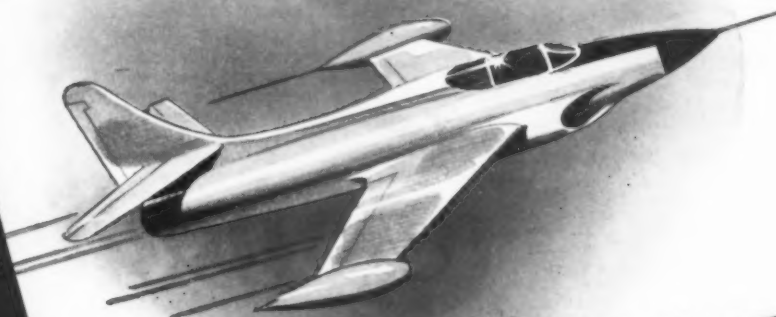
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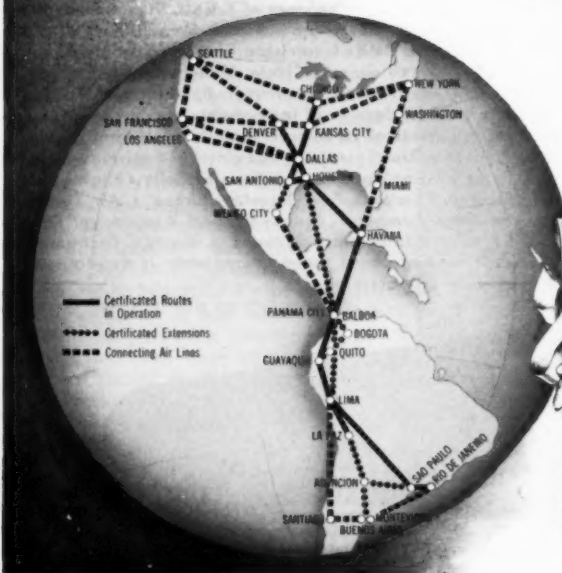
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Ω OMEGA, the official Braniff timepiece.

at Miami on its Mexico City-Madrid route. Aerovias Guest now lands at Miami for refueling. The letter stated that it was impossible to conclude a full bilateral with Mexico at this time but that another attempt would be made later.

In addition to Braniff and WAL, Pan Am and American are expected to oppose the U. S. plan. Pan Am would lose connecting business it now receives from EAL. American, now operating New York-Mexico City, is restricted from flying non-stop, and might be faced with non-stop competition.

O'Connell's letter did not indicate who had participated in making the government's decision, except to say that the course of action had been "decided." It is not believed that the airlines were consulted before the decision was made.

Hawaiian Airlines Loses Round in TPA Damage Suit

Federal Judge Delbert E. Metzger in Honolulu held late last month that the original incorporation of Hawaiian Airlines by Inter-Island Steam Navigation Co. constituted a *per se* violation of anti-trust laws.

This summary judgment, granted on motion of counsel for Trans-Pacific Airlines, paved the way for trial of TPA's suit against Hawaiian Airlines for cumulative damages stemming from its alleged obstruction of Trans-Pacific's efforts to obtain a certificate to operate a scheduled inter-island air service in Hawaii.

Trans-Pacific started service last spring under a certificate granted by the Civil Aeronautics Board.

Still pending is an anti-trust suit brought against Hawaiian and Inter-Island by the Department of Justice. The government is asking for a summary judgment similar to the one obtained by Trans-Pacific and also has requested an injunction that would block current plans for divorcement of the two companies on the ground that current divorcement plans would make prosecution of the anti-trust suit "impossible."

Braniff Merges Domestic & Latin American Divisions

Braniff Airways has combined its domestic and Latin American divisions, naming Rex Brack, former domestic general traffic and sales manager, as system general traffic manager.

W. R. Beattie, former general traffic manager of the Latin American division, was appointed manager of agency and interline sales, succeeding Al Aldridge, who is now in charge of the company's Los Angeles office. Headquarters of the company's northern regional traffic office, under Robert Phinney, have been transferred from Oklahoma City to Suite 305, 119 South State Street, Chicago.

People in the News

Aubrey Keif, manager of aviation sales for The Texas Company, New York, has been named chairman of the expanded Aviation Technical Service Committee of the Division of Marketing of the American Petroleum Institute. **W. D. Parker**, manager of aviation sales for Phillips Petroleum, is vice chairman, and **E. E. Lothrop**, of the American Petroleum Industries Committee, is secretary and staff representative.



Keif

John T. Floberg, 34-year-old Chicago attorney and a relative by marriage of Secretary of Navy Matthews, has been named by President Truman to fill the post of Assistant Secretary of Navy for Air, subject to Senate confirmation.

William Westlake, formerly executive director of the Congressional Aviation Policy Board and more recently director of domestic information for the Economic Cooperation Administration, has been appointed as a Civil Aeronautics Administration liaison consultant with components of the aviation industry in an effort to promote uniform understanding of the aims of the Radio Technical Commission for Aeronautics program.

Clarence N. Johnson has been promoted from production manager to managing editor of the *Official Airline Guide*, and **Robert R. Parrish**, formerly office assistant, has been named production manager.

CAB CALENDAR

Dec. 19—(Docket 3695) Hearing on application of Florida Airways for final mail pay settlement. Tentative. Examiner R. Vernon Radcliffe. Postponed from November 14.

Jan. 4—(Docket 3397 et al.) Hearing in Transcontinental Coach Type Service Case. Tentative. Examiner William J. Madden. Postponed from November 28.

Jan. 4—(Docket 3720) Hearing in Trans-Texas Airways Certificate Renewal Case. Tentative. Examiner James M. Verner. Postponed from December 6.

Jan. 9—(Docket 946 et al.) Hearing in New York City Area Helicopter Service Case. Tentative. Examiner Ferdinand D. Moran. Extended from December 5.

Jan. 9—(Docket 3717 et al.) Hearing on applications of five Cuban companies for Cuba-Florida foreign air carrier permits. Tentative. Examiner Paul N. Pfeiffer.

Jan. 9—(Docket 1705 et al.) Hearing on CAB Investigation of Accumulation, Assembly, and Distribution Tariff Rules. Tentative. Examiner Herbert K. Bryan.

Jan. 16—(Docket 2832) Hearing on application of Nationwide Airlines, Inc. for certificate to operate between points in Michigan. Tentative. Examiner R. Vernon Radcliffe.

Jan. 17—(Docket 3500 et al.) Hearing in National Airlines Dismemberment Case. Tentative. Postponed from January 4.

Feb. 6—(Docket 2724) Hearing in Colonial Airlines, Inc.—Final Mail Rate Case. Tentative. Examiner R. Vernon Radcliffe.

Feb. 13—(Docket 3966) Hearing in West Coast Airlines Certificate Renewal Case. Tentative. Examiner Ferdinand D. Moran.

Aviation Calendar

Dec. 15-16—Air Transport Assn. annual meeting, Carlton Hotel, Washington, D. C.

Dec. 16-17—National Aeronautic Association national aviation meeting, Hotel Statler, Washington, D. C.

Dec. 17—Institute of the Aeronautical Sciences 13th annual Wright Brothers lecture, U. S. Chamber of Commerce Building, Washington, D. C.

Dec. 17—Annual Wright Brothers Memorial Dinner, sponsored by Aero Club of Washington, Hotel Statler, Washington, D. C.

Jan. 9-13—SAE annual meeting and engineering display, Hotel Book-Cadillac, Detroit, Michigan.

Jan. 10-11—Florida Flying Alligator Club's "Rituals & Frolics," Melbourne, Fla.

Jan. 13-15—18th Annual All American Air Maneuvers, Miami, Fla.

Jan. 23—Institute of the Aeronautical Sciences annual Honors Night dinner, Hotel Astor, New York, N. Y.

Jan. 23-26—Institute of the Aeronautical Sciences 18th annual meeting, technical sessions, Hotel Astor, New York, N. Y.

Jan. 30-Feb. 5—American Petroleum Institute aviation technical service committee meeting, Los Angeles, Calif.

Feb. 18-26—1950 New York Airplane Show in conjunction with National Sportsmen's and Vacation Show, Grand Central Palace, New York, N. Y.

March 6-9—American Road Builders' Ass'n annual meeting (including Airport Div.) Netherlands Plaza Hotel, Cincinnati, Ohio.

April 4-6—ATA annual engineering and maintenance conference, Hotel Continental, Kansas City, Mo.

April 10-14—American Society of Tool Engineers exposition, Convention Hall, Philadelphia, Pa.

April 16-20—American Association of Airport Executives annual meeting, Neil House Hotel, Columbus, Ohio.

April 17-19—SAE aeronautic meeting and aircraft engineering display, Hotel Statler, New York, N. Y.

April 24-26—Airport Operators Council third annual meeting, Hotel Carter, Cleveland, Ohio.

June 4-9—SAE summer meeting, French Lick Springs Hotel, French Lick, Ind.

June 10-13—National Aeronautic Association 28th annual convention, Hotel Statler, St. Louis, Mo.

International

Jan. 5—ICAO Legal Committee meeting, Taormina, Italy.

Jan. 24—ICAO Council, ninth session, Montreal.

Feb. 14—ICAO Meteorological Division meeting, Paris.

March — ICAO African-Indian Ocean Fixed Services meeting, location undecided.

April — ICAO Caribbean regional meeting, location undecided.

June — ICAO Fourth Assembly, Montreal.

June — ICAO Legal Committee meeting, Montreal.

October — ICAO Rules of the Air/Air Traffic Control Division meeting, location undecided.

November — ICAO Middle East regional meeting, tentative, location undecided.

November — ICAO Airworthiness/Operations meeting, location undecided.

Between the Lines:

Helicopter in Combat

By James J. Haggerty, Jr.



THE HELICOPTER, once strictly a non-combatant aircraft, is becoming more and more an actual weapon, rather than just a support plane. We pointed out in these dispatches a few issues ago that the Marines had formulated a new beachhead assault strategy in which the helicopter is employed as an aerial troop landing ship.

Now the Navy has found a new use for the rotary-wing airplane in anti-submarine warfare. This new tactical helicopter employment, discussed at the Navy's fourth anti-submarine warfare conference in Washington a fortnight ago, consists of using a pair of 'copters as a hunter-killer anti-sub team.

The Navy has a similar team of conventional aircraft—the Grumman AF-1 and AF-2 Guardian. One of the Guardian team is equipped with special radar equipment for locating enemy submarines, including those of the schnorkel type, which can "breathe" underwater and do not have to surface. Having located the sub, the hunter of the team flashes the word to his killer teammate, who moves in to finish it off.

The helicopter team will function in the same manner, not as a replacement for the Guardian-type team, but as a complement, probably handling the close-in, fleet support assignments while conventional anti-sub aircraft handle the longer-range jobs.

Unique Advantages

Because of its peculiar performance characteristics, the helicopter has some advantages not to be found in conventional propeller or jet aircraft. Its slow speed and its ability to hover are, obviously advantageous in anti-sub work. This same slow speed might also appear to be a disadvantage, should the submarine decide to surface and make an argument of it. But the Navy is convinced that the helicopter can take care of itself in this respect—by the time the sub could surface and unlimber its deck guns the 'copter could be elsewhere.

It has another important advantage in addition to its slow-down capabilities for better radar finding, and that is in easy torpedo launching. The torpedo launched from a high speed attack bomber strikes the water with tremendous velocity, frequently causing displacement of some of the complex machinery inside its hull, which might result in a malfunction. Such malfunctions can be costly, especially when the new, target-seeking torpedoes, with their expensive and complicated internal mechanism, are employed.

The rotary-wing "attack bomber" can solve this problem by lowering its torpedo gently into the water, pointing the warhead in the general direction of the submarine and letting the seeking mechanism do the rest. Current plans for the utilization of the helicopter in anti-sub work call for slinging the torpedo underneath the fuselage, rather than building new bombbay-equipped helicopter types. One type of helicopter has already been tested as the radar equipped hunter member of the team and found satisfactory. Actual helicopter torpedo launching tests should be forthcoming in the near future.

Prototype Issue Revived

Each year several prototype bills are introduced in Congress, each worded differently but all calling for basically the same thing—government subsidization of the development of new transport aircraft types.

None of the bills ever gets very far for two reasons: the apathetic attitude of the Air Force toward the subject, and the opposition of some plane builders to it. This opposition has some justification; manufacturers who have invested millions of their companies' dollars in

developing post-war transports now flying do not want to see the government provide their competitors with money to develop new types that will be competing in a limited market with their own planes.

In the next session of Congress, however, the prototype bill will probably get more attention than it has to date. One reason, we are reliably informed, is that the Air Force has lost its apathy and will probably back the prototype proposals, inspired by the not altogether unselfish view that the passage of such a bill would permit military control of transport development.

There has, as yet, been no definite indication that the manufacturers' opposition has lessened, but there is one factor that would seem to dictate a change of attitude, and that is British progress in jet transport development. American manufacturers have generally displayed a back-of-the-hand attitude toward Britain's progress in this field, claiming that, when the time is ripe, American engineering skill will come up with something that will eradicate Britain's early lead.

Inwardly, however, some manufacturers are concerned, realizing that the British are piling up valuable service test experience with their early jet efforts, and realizing, too, that unless they get started soon on a parallel development program, that "ripe time" may arrive before we have a jet ready for active service, thereby forcing American carriers to buy British aircraft.

Coupled with this uncomfortable possibility is the knowledge that no company can today undertake to finance a private jet development program without risking bankruptcy. Estimates of



Douglas Skyrocket—There is not much impression of speed in this photo, but this plane has "repeatedly exceeded the speed of sound in level flight," according to an official Navy announcement. It is the Douglas D-558-2 Skyrocket, one of seven planes in the Air Force-Navy-National Advisory Committee for Aeronautics special research program. It has a dual power plant: a Westinghouse J-34 jet engine developing 3,200 lbs. thrust, and four Reaction Motors rockets, adding another 6,000 lbs. for short durations. The ridges in the wing are "stall vanes," designed to keep the flow of air close to the fuselage, thereby avoiding burbling at the wing tips.

the cost of building a prototype vary from \$15 million to \$35 million, but whatever the figure might be, it appears that the government will have to float at least a good part of it in one way or another.

It's still too early to say that there is a trend toward new backing of the prototype bill, but at least a lot of people are considering it.

Lockheed Industrial Peace Praised In NPA's Case Study

Lockheed Aircraft Corp.'s "progressive and flexible approach to bargaining" is cited by the National Planning Association as one of the main factors in Lockheed's ability to maintain labor peace. The NPA lists the relations of Lockheed with its union, Lodge 727, International Association of Machinists, as "evidence that industrial warfare is not inevitable" in a 100 page case study entitled "The Causes of Industrial Peace Under Collective Bargaining."

The case study records the 12 year no-strike relationship between Lockheed and Lodge 727. The conditions which have hindered and helped Lockheed and IAM in their collective bargaining relationship are similar to those in other West Coast airframe construction companies, the study points out, and yet bitter strikes have occurred at four large Southern California aircraft companies.

NPA states that Lockheed contributed to the peace which has existed for the past 12 years by voluntarily recognizing the union at the start. It was the first airframe company in Southern California to agree to collective bargaining and it has given the union continued acceptance.

The company has developed a personnel program which has had a constructive effect on the bargaining relationship. It has, says NPA, a reputation for liberal treatment of its employees, has been a leader in the aircraft industry in regard to holidays, overtime payments, paid vacations, sick leave and insurance plans, and has devoted careful attention to selection of new employees.

IAM, on its part, has accepted the company and "has promoted no ideological quarrel over the private ownership and operation of the industry," according to NPA. The union is noted, NPA states, for its democratic administration and its leaders have been alert, aggressive and honest.

The study, part of a three year project to determine the causes of industrial peace, is available in printed form from the National Planning Association, 800 1st Street, N. W., Washington 6, D. C., at \$1 per copy.

Air Force Bases Renamed

The Air Force will rename two Texas air bases in honor of Texans killed in the war. Lubbock Air Force Base becomes Reese Air Force Base and Camp Hood AFB becomes Gray AFB.

Production Spotlight

Boeing Top Contractor: The Air Force's fiscal 1949 aircraft procurement program is all wrapped up now, and an AMERICAN AVIATION survey reveals that, from the standpoint of airframe weight, Boeing Airplane Co. was top contractor.

The USAF bought 2,324 planes with an aggregate airframe weight of 31,746,000 pounds out of its 1949 appropriations. A total of 18 plane types were procured from 11 different manufacturers. Boeing, with orders for three plane types (B-50, B-47, C-97), amassed a total of 8,663,600 airframe pounds, a little more than 27% of the total. Consolidated Vultee Aircraft Corp. was second with 7,195,500 airframe pounds, 22.6% of the total.

Other contenders were Lockheed Aircraft Corp., 4,587,200 airframe pounds, or 14.4% of the total; North American Aviation, Inc., 3,142,200 pounds, 9.9%; and Republic Aviation Corp., 2,658,500 pounds, 8.3%.

The following is a breakdown of USAF fiscal 1949 procurement, listing plane types bought and poundage by company:

Company	Number	Plane Type	Airframe Pounds
Boeing Airplane Company	132	B-50 bombers	6,639,600
	23	C-97 transports	1,193,000
	15	B-47 jet bombers	831,000
		Total	8,663,600
Consolidated Vultee Aircraft Corp.	75	B-36 bombers (incl. RB-36's)	6,727,500
	36	T-29 trainers	468,000
		Total	7,195,500
Lockheed Aircraft Corp.	557	F-80 jet fighters	3,230,600
	110	F-94 all-weather fighters	627,000
	128	T-33 jet trainers	729,600
		Total	4,587,200
North American Aviation, Inc.	333	F-86 jet fighters	2,264,400
	266	T-28 trainers	877,800
		Total	3,142,200
Republic Aviation Corp.	409	F-84 jet fighters	2,658,500
Fairchild Engine and Airplane Corp.	99	C-119B troop transports	2,534,400
Douglas Aircraft Co.	28	C-124 heavy transports	1,834,000
Northrop Aircraft, Inc.	48	F-89 all-weather fighters	667,200
Grumman Aircraft Engineering Corp.	32	SA-16A rescue amphibians	384,000
Sikorsky Aircraft Div., United Aircraft Corp.	16	H5H helicopters	46,400
	5	YH-19A helicopters	15,000
Cessna Aircraft Co.	12	LC-126A liaison	18,000
Grand Total	2,324		31,746,000

Interceptor to Muroc: The Air Force's YF-86D, prototype of North American Aviation's newest model of the F-86 series of swept-back jet fighters, has been delivered to Muroc Air Force Base, the Air Force experimental test base in California's Mojave Desert. The plane was trucked to Muroc without its engine (a General Electric J-47 equipped with afterburning) which will be installed later. First flight is expected early next year.

The Air Force plans to place the "D" in production and a sizeable order will be forthcoming from fiscal 1950 funds. Production models will be powered by a more powerful engine. The Air Force also plans to continue production of the standard F-86, and an order for 111 planes is included in the current procurement schedule.

First Flight: Douglas Aircraft Co.'s giant C-124, Air Force heavy transport, has successfully completed its first test flight at Long Beach, Calif. . . . Douglas has developed an automatic analyzer which interprets the complicated data radioed from research rockets, saves 80% of the time and cost involved in interpreting.

—J. J. H.

PEOPLE

ADMINISTRATIVE

Crawford T. Johnson, Jr., president of Crawford Johnson & Company, Inc., Birmingham, Alabama, has been elected to the board of directors of Capital Airlines.

Lee Glasgow, who joined American Airlines as a senior accountant in 1936, has been elected assistant treasurer of the company. He has been assistant comptroller for the past year and will retain that title in addition to the new one. He was with the Curtiss-Wright Flying Service in Indianapolis before joining American.



Glasgow

W. S. Weismann, Jr., formerly district sales manager for American Airlines in Buffalo, has been promoted to assistant to the vice president in the company's Washington administrative offices.

Carl J. Setter, who has been with Continental Air Lines in Denver for the past ten years, has joined Western Air Lines as chief cost analyst. He will be stationed at Los Angeles.

OPERATIONS-MAINTENANCE

Jack Winn has been advanced from operational assistant for Pan American Airways at Miami to assistant communications director of the line's Latin American Division. He joined PAA in 1938 as a radio operator.

Marion Howell has been promoted from assistant station manager to station manager for The Flying Tiger Line at Los Angeles. Other station managers appointed as a result of the company's expansion of operations include: **Phillip E. Peters**, formerly on the San Francisco sales staff, becomes station manager at Denver; **Noel C. Gilbert** has transferred from San Francisco to Boston as station manager; **E. J. McCorkill** goes from Cleveland to Omaha; **James Giffin**, formerly cargo foreman at Los Angeles, takes over the Milwaukee station, and **Robert Fitzgerald** manages the Hartford station.

Mrs. Sarah Elder, for the past three years associated with the Memphis operations and stewardess departments of American Airlines, has been named chief stewardess for the company's northern region.

TRAFFIC & SALES

Marjorie Young has been promoted to district sales manager of Western Air Lines for Helena, Butte and Great Falls, Montana. She joined WAL in 1942 as

secretary to the Great Falls station manager and subsequently became counsellor in charge of sales activities in that city.

Douglas F. Bush, formerly with Capital Airlines and Northwest Airlines, has joined the sales staff of The Flying Tiger Line in Detroit. **Albert Farr**, formerly with Northeast Air Lines and American Airlines, has been appointed district sales manager for the Tigers at Boston; **Paul Bowlus**, formerly on the New York sales staff, has been appointed district sales manager at Hartford; and **Bob Burke**, formerly New York City sales manager, has been named district sales manager at Buffalo.

Crawford W. Cline, who joined All American Airways last spring as manager of schedules and tariffs, has been appointed manager of the line's recently revamped traffic department, a post which has been expanded to include station operations, space control and reservations. Before joining AAA, Cline had been with American Airlines as assistant to the manager of the cargo traffic department and also as assistant manager of schedules and tariffs.



Cline

Loton J. Horton has been promoted from reservations agent to sales representative for American Airlines at Hartford.

Koos Dusseljee, formerly assistant district accountant for American Overseas Airlines in Amsterdam, took over the duties of District accountant on December 1, replacing **Jo Hekkenberg**, resigned.

MANUFACTURING

C. N. Monson has resigned as executive vice president and member of the board of directors of Northrop Aircraft to devote his time to other business activities. The position will not be filled immediately and the duties of executive vice president will be reassigned among other company officers.

A. C. Ryan, formerly director of purchases for Bellanca Aircraft Corp., has been promoted to director of sales, and **Arno Loessner** has been named military sales manager.

Don M. Parker, formerly with Pan American Airways, has been appointed general sales manager in charge of sales, advertising and Public relations for Piper Aircraft Corp. **J. Willard Miller** will continue as sales manager for personal aircraft.

Dale Armstrong, for the past year European public relations director for Lockheed Aircraft Corp. with the advertising firm of Foote, Cone and Belding in London, has resigned and is returning to the United States before the end of the year.

Others in the News

Walter H. Beech, president and board chairman of Beech Aircraft Corporation, has been elected chairman of the Personal Aircraft Council of the Aircraft Industries Association, and also will serve as a member of AIA's Board of Governors. He succeeds **C. J. Reese**, president of Continental Motors.



Beech

Air Vice Marshal Allan Ferrier, member of the Air Transport Board of Canada, has been named assistant secretary-general of the International Civil Aviation Organization, succeeding **Ivor H. McClure** of the United Kingdom.

Herbert Fox has resigned as director of the Tennessee Bureau of Aeronautics and has been succeeded by **Tom Kesterson** of Knoxville, a member of the aviation commission.

Walter R. Macatee, who for years headed the Airport Division of the American Road-Builders Association, has joined CAA's Office of Airports as highway transportation specialist. He will act as liaison with the Bureau of Public Roads.

Jerome C. Hunsacker, present chairman of the National Advisory Committee for Aeronautics, and **Ronald M. Hazen**, director of engineering for Allison Division of General Motors, have been appointed to new five-year terms on the NACA.

Charles Stearns, former assistant general counsel for Northwest Airlines, has joined the Los Angeles law firm of Morrow and Trippett.

J. Clawson Roop, former vice president and treasurer of Pan American Airways, resigned as Deputy Chairman of the Munition Board's Committee on Facilities and Services upon completion of its major assignments.

Robert B. Hotz, news editor of *Aviation Week*, will join the public relations department of Pratt & Whitney Aircraft Company January 1.

Robert E. Guest, treasurer of Air Cargo, Inc., has tendered his resignation effective December 31. Before joining ACI on its reorganization in 1947, he had been with Capital Airlines and TACA Airways.

Coburn Elected President Of Air Traffic Conference

Hugh W. Coburn, vice president-traffic of Mid-Continent Airlines, was elected president of the Air Traffic Conference of America at its annual meeting in Chicago.

Other officers elected were: Walter Sternberg, v. p.-traffic, National Airlines, first vice president of ATC; and James W. Austin, v. p.-traffic and sales, Capital Airlines, second vice president. M. F. Redfern, vice president of the Air Transport Association, will continue to serve as executive secretary.

The elected officers will form ATC's executive committee for 1950.

Perreault Wins TWA Award

William D. Perreault, technical editor of AMERICAN AVIATION has been named as third-place winner in the technical class of Trans World Airline's 12th annual aviation writing and picture competition.

Other winners, by class, were as follows:

Magazine and book class: Robert S. Ball of Detroit first; Douglas J. Ingells of Dayton, second; and Herbert O. Johansen of New York, third.

Newspapers (open class): Leon Shloss, International News Service, first; Claude Witze, Providence Journal-Bulletin, second; and James R. Patterson, Kansas City Star, third.

Newspaper (selective class): Clair C. Stebbins, Zanesville (O.) Signal, first; Al Leach, Arizona Republic, second; and Rollin C. Steinmetz, Lancaster (Pa.) Sunday News, third.

Technical class: Arthur W. D. Harris, formerly with Aviation Operations, first; Nathaniel F. Silsbee, formerly managing editor of Aero Digest, second, and Perreault, third.

Photography: Russell Bull of Minneapolis Tribune, first; Mike Rotunno of Chicago Herald-American, second, and Morris Berman, Pittsburgh Sun-Telegraph, third.

Cash awards and commemorative plaques were awarded to the winners at a dinner on December 10 in Phoenix.

AITA Re-Elects Cotterel

Air Industries and Transport Association of Canada at its recent annual meeting named the following officers and directors: H. C. Cotterel, Trans-Canada Air Lines, president; C. F. Burke, Maritime Central Airways, eastern vice president.

Directors are M. E. Ashton, Central Northern Airways; G. W. G. McConachie, Canadian Pacific Air Lines; Walter Deisher, Avro Canada; C. H. Dickens, deHavilland Aircraft; C. D. Fairweather, Canadair; Edwin MacDonald, MacDonald Bros. Aircraft; R. J. Moffet, Canadian Car & Foundry; A. Bandi, Aviation Electric; R. Rabnett, Shell Oil. Bandi is honorary treasurer, and Ashton honorary secretary.

Many of the officers and directors are the same as last year, including Cotterel, who served as president.

Airline Commentary

By ERIC BRAMLEY

HANGING on the wall in the New York office of Rod King, American Airlines' director of reservations and ticket offices, is the following: "Money is the root of all evil; money comes from passengers; therefore, passengers are evil." Don't blow your tops, though, because the big, black headline over this little gem says: "Taint so at American Airlines."

We wandered into British Overseas Airways Corporation's New York ticket office last week, and were intrigued by a small gadget on the counter—a small, round bowl with what looked like a porous substance in the bottom. Then we noticed the sign over it: "Have you Emptied Your Fountain Pen?" Well, strike me pink, if BOAC wasn't giving departing passengers a chance to drain their fountain pens right then and there instead of using their shirt pockets for a container! BOAC has always been noted for service, but now we've heard everything.

Here's an intriguing item received from west coast operatives. Terry Drinkwater, president of Western Air Lines, and six cohorts, Stan Shatto, Marv Landes, Gerry Brooder, Art Kelly, Tom Murphy and Dom Renda, had the best dinner of their lives in Vancouver, B. C., by accident and by courtesy of Canadian Pacific Air Lines. Seems that Grant McConachie, CPAL president, commissioned his regional sales superintendent, J. A. Barber, to entertain the visitors from the U. S., who were en route to Western's newly-certificated point of Edmonton, in his absence and take them to dinner at a fashionable Vancouver club. Dinner and service were superb. Too good, thought Drinkwater, an old hand on the broiled chicken circuit. He was sure of it when a flaming baked Alaska came in for dessert. His suspicions were verified just as he finished the baked Alaska. Glancing toward the dining room door, he observed a party of eight (same number as Barber and his WAL guests) immaculate in evening dress, and the horror-stricken face of the headwaiter. "Looks like quite an oversale," observed Drinkwater, patting the two inches he had just added.

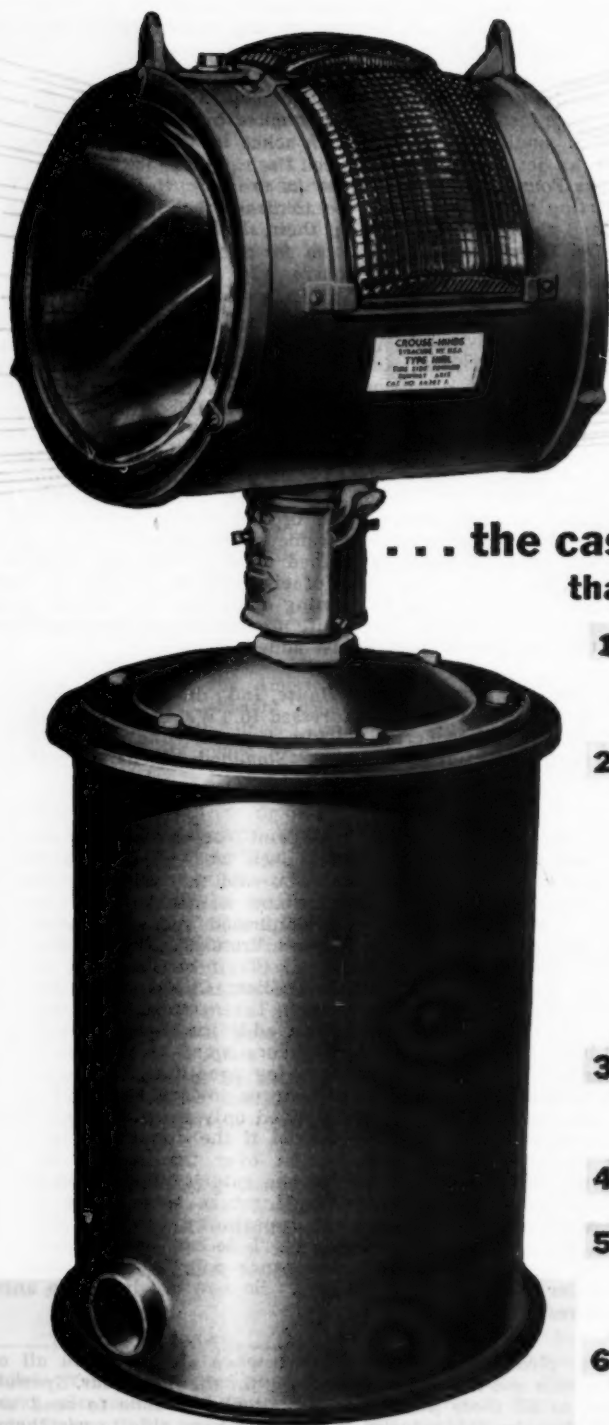
Clerks in the post office at Terre Haute, Ind., did a quick double-take when they received a letter addressed to TWA at the "Munimible" Airport. They recovered quickly, however, and delivered it to the company at Municipal Airport. Somebody needs a spelling lesson.

Here are the answers about that "fine print" on airline trip insurance policies. You may recall that two issues back we had a letter from Al Dallas, of the Air Transport Association, who said that he never had time to read this print when he bought policies and wanted to know (1) if he had to have a return trip ticket with confirmed space in order to be covered by checking the little box marked "return"; (2) whether there was a time limitation on a round-trip, and (3) if he forgot to mail the beneficiary form, would he be covered. William Churchill, of Associated Aviation Underwriters, has supplied answers. Taking them in reverse order, the answer to the last one is yes, and he adds interestingly that in the Eastern Air Lines' Washington accident "there were 11 policies involved and it was possible, through our own checking procedure, for us to either make the loss payment or start the procedures toward that end in eight of the 11. In other words, we actually received only three claims." Answer to the second question is that you're covered if the domestic trip is completed within 30 days. On policies bought over the counter for international trips, the limit is 12 months but the rate is higher. On the first question, you don't have to have confirmed return space—only a round-trip or open-jaw ticket. While he has the opportunity, Mr. Churchill wants to comment on the "fine print" on policies. "I do not know whether you are aware of the fact, but there is no insurance policy printed which uses a type face smaller than 10 point," he says. So now we have the answers and the matter rests.

Again that pleasurable time has come when we wish you all a Merry Christmas and the best of everything for the New Year. Special thanks goes to all those fine people who took the time to send us squibs and ideas for this column. We haven't been able to use them all, because a column will hold only so much, but the more we receive the better we like it. Anyway here's to a prosperous 1950.

CROUSE-HINDS

HIGH

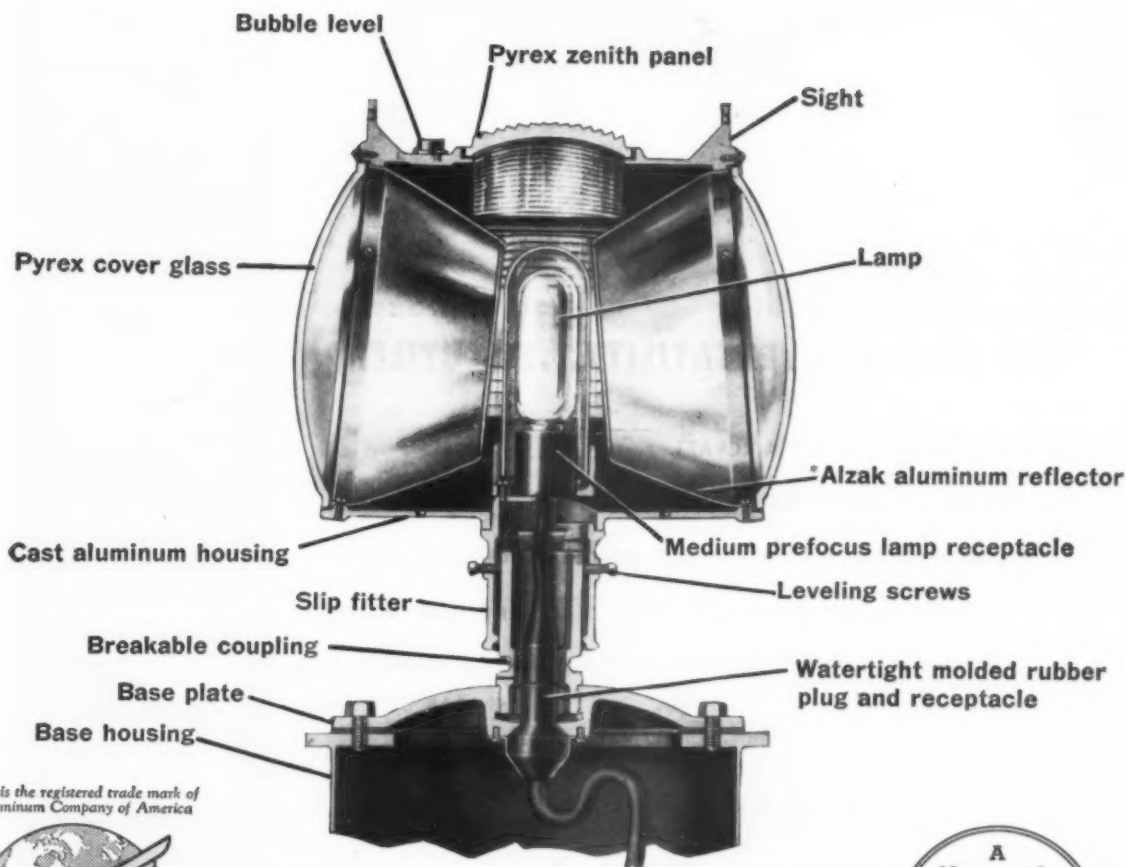


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- 3 **Wide beam.** The 12-degree horizontal beam spread enables a pilot to see the lights when he is considerably off the center of the runway.
- 4 **Most economical installation.** Only a single No. 8 cable is required.
- 5 **Conversion feature.** Type HIRL fixtures can be installed on most existing CPD base housings. A domed base plate is used with a special short type insulating transformer.
- 6 **Approved by CAA** under revised Specification L-819 that includes a 75 candlepower minimum in all planes above the horizontal.

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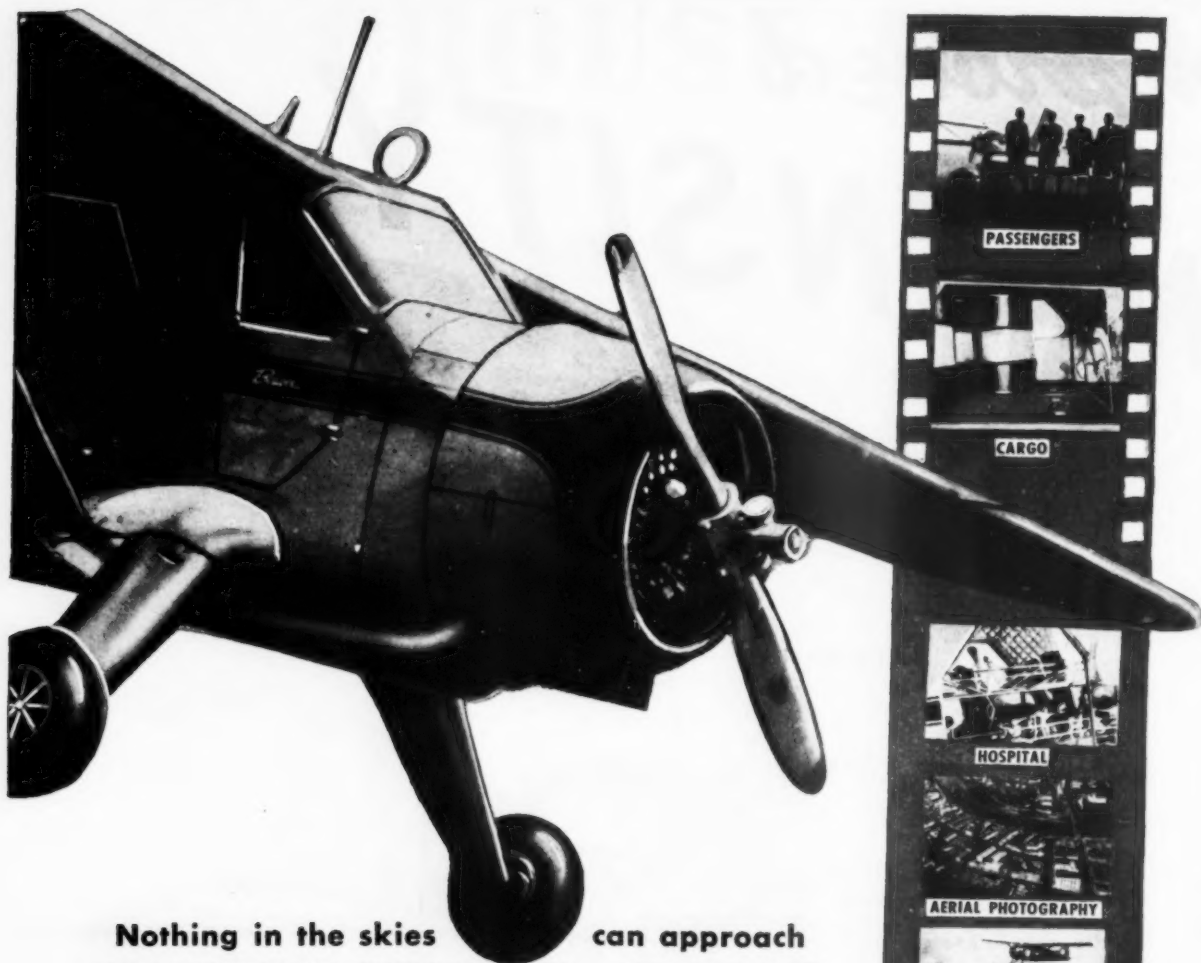


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WHEELS

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336 Meetings to Date:

Project Allocation to Agencies Initiates New ANDB Phase

By WILLIAM D. PERREAULT

The trend of development processes within the Air Navigation and Development Board is clearly outlined in the Board's report for the fiscal year 1949, made by ANDB chairman Ralph S. Damon. Having devoted considerable time to forming a sound foundation for its task through the selection of a competent staff of technical experts, the Board has now turned to the allocation of responsibilities and initiation of projects.

Primary duty of the ANDB is "to formulate, and from time to time modify as it may deem necessary, a unified program for research on the development of aids for a common national system of air navigation and air traffic control (known as the Common System) to serve the needs of civilian and non-tactical military aviation but being capable of useful integration with any defense system established by the National Military Establishment."

In furthering this end, the ANDB staff recently reviewed some 60 projects deemed to form parts of the Common System and reached decisions on their handling. Duplication of efforts in these particular fields will be eliminated by assigning to each of the agencies (CAA, Army, Navy and Air Force) certain projects in the transition and ultimate programs. Still other projects have been allocated to civil organizations.

Within the Board group the assignments have been allocated as shown here:

Agency	Existing Projects
Army	None
Navy	None
Air Force ..	OBD Evaluation
	Distance Measuring Equip.
	Precision Approach Radar
	Airport Surface Detection Equipment
	1000 mc Omni-range and ILS
	Primary Radar (ultimate)
CAA	Traffic Control Studies

Agency	New Projects
Army	1000 mc Tubes and Circuits
Navy	Picture Storage Tubes
	Secondary Radar
	Transponders
	Antenna Research
Air Force ..	Navigation Aids Evaluation
CAA	Basic Studies

The 1000 megacycle tube and circuit study to be handled by the Army is an important one. All of the functions in the ultimate common system are scheduled to operate in the 960-1600 mc band. Although some basic data exists on tube and circuit design in this range, much remains to be done. Most of the work already completed is still classified.

Picture storage tubes for use in dis-



Ralph S. Damon
ANDB Chairman

plays, such as in radar scopes, will probably fit into several phases of the ultimate system. The exact position is not fixed since the system definitions are not final at this time. Basically these tubes would be used to provide pictorial displays of relative aircraft positions, very similar to the way television sets reproduce scenes. The storage characteristic of the tube is important in that it will insure brighter

pictures which can be used more universally and provide more usable data.

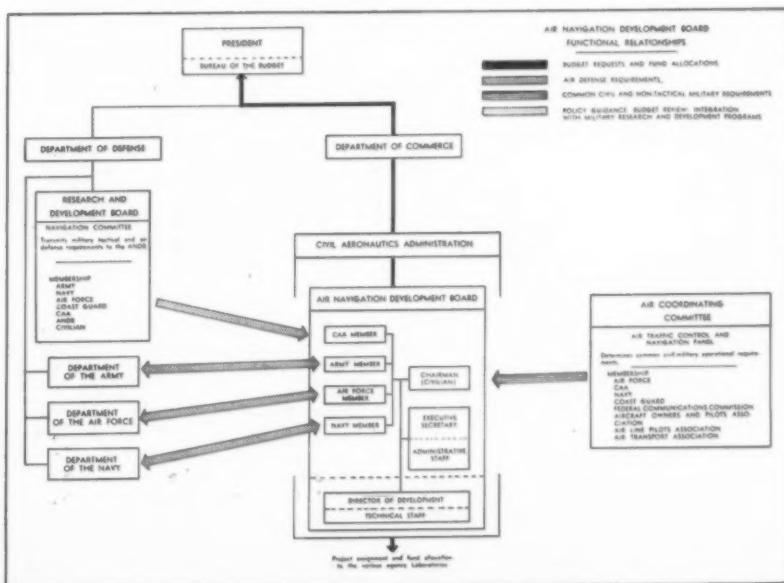
Most radar now in use is primary radar. Ground installations send out signals which strike aircraft in the air and are subsequently picked up by the ground station once more. Measuring time intervals and relating this to the azimuth of the antenna when the signal was originated, this is translated into aircraft positions on the surveillance radar scopes.

Secondary radar is necessary in the ultimate program to provide additional intelligence beyond azimuth and relative distance. Secondary radar depends on transmitting a signal into the air which triggers, or sets in motion, transponder equipment carried in the airplane. Depending on the needs dictated by system requirements, transponders can be made to provide aircraft identification, altitude, speed and virtually any combination of data. Secondary radar is the ground transmitter used in conjunction with airborne transponders to provide intelligence required by any air navigation or traffic control system which may be devised.

Antennae

Antenna research involves both ground and airborne equipment for use in the frequency bands allocated to Common System. Primary problem rests with airborne antennae which in the higher frequencies are rendered ineffective when the aircraft makes certain maneuvers. During these times parts of the aircraft shield out the antenna radiation pattern and disrupt system operation. Some study will go into ways and means of securing high resolution (extreme accuracy) at short range, within approximately 20 miles of the transmitters.

Under existing projects the OBD evaluation, distance measuring equip-



OPERATIONS-MAINTENANCE

ment and precision approach radar systems are pretty well advanced. Working with other industry groups including ATA and CAA, the Air Force has already completed one phase of testing of the omni-range system, DME and the course line computer. This test, conducted at Indianapolis, provided valuable data on operating characteristics under one set of terrain conditions. Parallel tests are now planned at Patuxent, Md., Phillipsburg, Pa., and Ogden, Utah, to provide data on characteristics in mountainous terrain.

Navigation Aids

Navigation aids evaluation, being undertaken by the Air Force's All-Weather Flying Division at Dayton, will evaluate how the various proposed systems of enroute navigation fit into plans for the Common System and the effectiveness of those which show promise.

Another important phase of the USAF work will involve airport surface movement (detection) equipment. This equipment will aim at providing the controller with suitable data to monitor and control airplane movements of aircraft once they are on the airport.

In the development of primary radar for the ultimate system, the Air Force will be primarily concerned with increasing the range from 30 miles to about 100 miles and possibly adding volumetric data which will provide an indication of altitude in addition to the azimuth and distance now provided to the ground controllers.

In being assigned work relating to the visual oral range, instrument landing system and course line computer, CAA will continue in these fields which it has pioneered in conjunction with equipment manufacturers. Its new assignments in the development of airport time utilization equipment and terminal aids evaluation are major in scope.

Airport Utilization

ATUE will be used to provide the aircraft operator with assurance of a specific landing time at destination, or take-off time at point of departure. At present the low acceptance rate at airports during instrument weather flight conditions makes it necessary for airplanes that would normally land, if operating under visual flight rules, to enter the "stack" and hold until a landing sequence is allocated. By matching the aircraft schedules with airport acceptance rates, stacking will be greatly minimized. Limited stacking will continue to insure maximum utilization of the airport facility.

CAA will handle Terminal Aids Evaluation at its Technical Development and Evaluation Center in Indianapolis. A program will be initiated immediately to investigate traffic handling potentials of equipment such as airport surveillance radars, VHF automatic direction finders, precision approach radar as a monitoring aid, and communications necessary for full traffic capacity oper-



Col. Samuel A. Mundell
Air Force Member



John E. Sommers
CAA Member



Capt. William Cogswell
Navy Member



Bert A. Denicke
Executive Secretary



Col. Walter B. Larew
Army Member



Douglas H. Ewing
Director-Development

ations. Simultaneously CAA will investigate ground and airborne air traffic control displays including evaluation of a special Link trainer simulator for use in the transition or ultimate programs.

Planning of this work along with staff salaries during fiscal 1949 was handled through a \$100,000 administrative appropriation granted by Congress. For 1950 Congress has authorized a \$3,000,000 cash appropriation and \$4,000,000 in contractual authority. Arrangements for transferring the necessary funds to the agencies that will handle these projects have been initiated.

Combined Funds

It should be emphasized that these funds represent total investment in Common System development by both military and civil agencies.

Projects activated by ANDB outside of the member agencies include a contract with Cornell Aeronautical Laboratory to investigate the manner in which airport time utilization equipment can be worked into the system network.

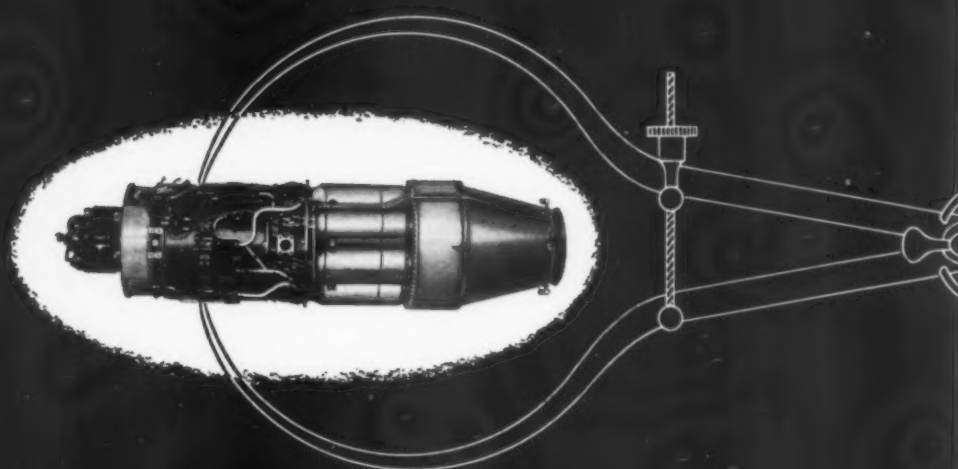
At Franklin Institute an ANDB study is underway regarding the desirability of building an air traffic control sim-

ulator for study of specific ATC problems. Another contract between ANDB and Cornell relates to the prediction of the characteristics of aircraft which will probably be in use in 10 to 15 years.

Man Power

In his official report to the Secretaries of Defense and of Commerce, Damon emphasized that "it was believed unwise to compromise on the caliber of the staff in order to speed up organizational processes" and that "men of the desired experience and breadth of vision are always in short supply."

The past and continuing progress of the ANDB work in developing the Common System is closely allied to this staff. In addition to the direct Board members, shown above, the technical staff of engineers, headed by able Dr. Douglas H. Ewing, will bear the great weight of high level systems engineering. An indication of the load carried by these men is that during the short life of the organization, ANDB personnel have participated in 336 meetings. The engineering technical staff referred to above includes Norman Caplan, M. K. Goldstein, J. W. Leas, L. R. Philpott and H. R. Senf.



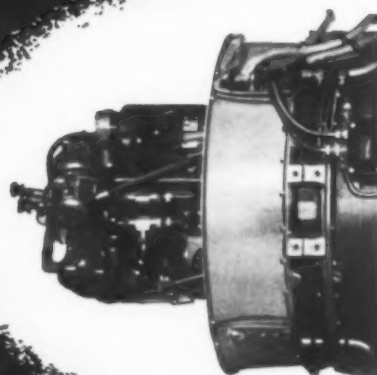
SAVES SPACE

Allison provides 5,000 pounds' thrust in a smaller diameter than any other engine.

Allison jet-powered airplanes:

Lockheed F-80 and TF-80 Shooting Star
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 Northrop RB-35B Flying Wing
 Martin P4M-1 Mercator
 North American AJ-1

J35 Axial-flow Turbo-Jet



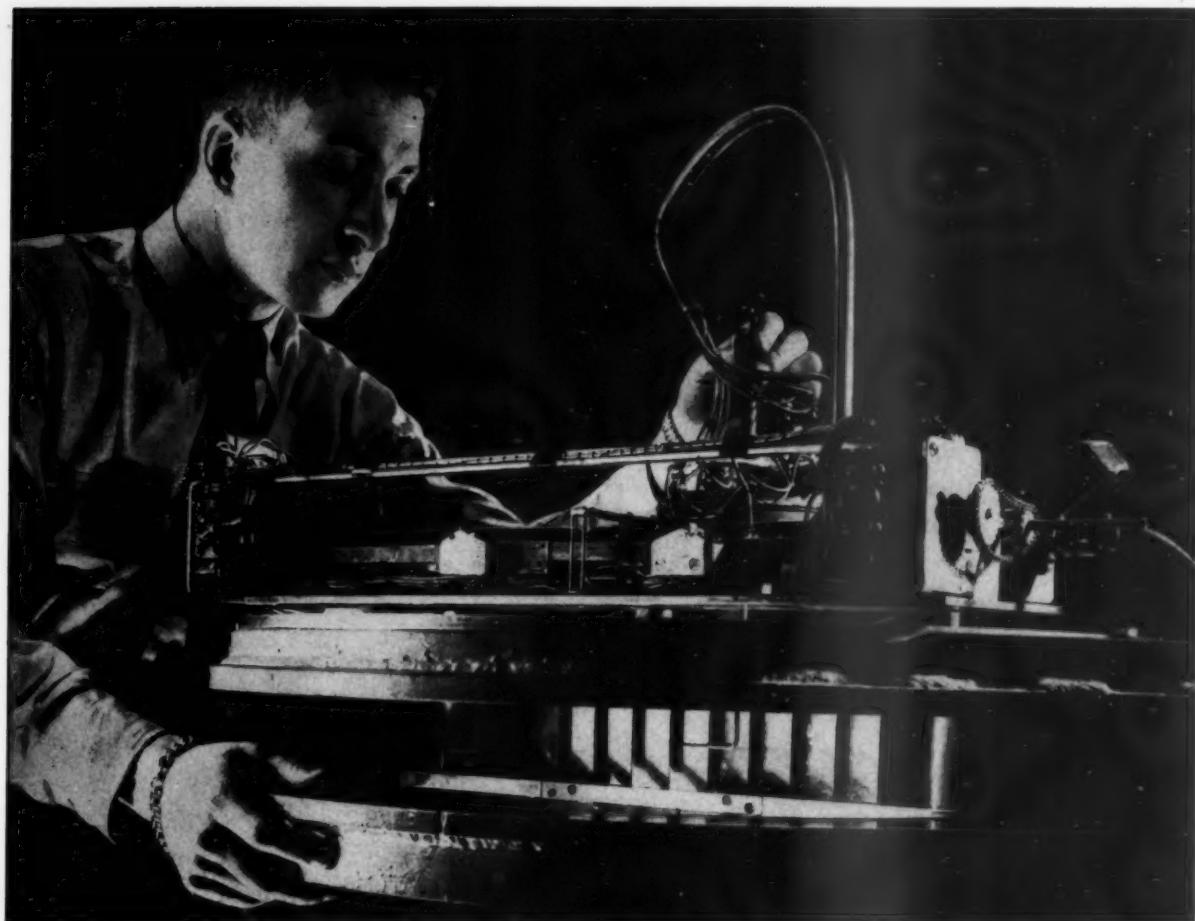
Allison

Builder of axial and centrifugal flow turbine engines

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**Indianapolis,
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A QUEST FOR THE PERFECT "SHAPE"

► This research engineer is seeking the best airfoil shape for the small but vitally-important blades of a jet engine turbine or compressor.

► This "wind tunnel" in the Wright laboratories can push air past the test blades at the speed of sound — an unusually high velocity for this type of equipment. The blades may be rotated in the airstream to change the angle of attack or may be assembled at various spacings to find the most efficient relationship between air and blade. Pressure readings behind the blades are picked up by a traveling probe and automatically recorded.

► There's a sound reason for this

large attention to small detail. For instance, a drop of one percent in the efficiency of the turbine section of a turbo-prop engine means a drop of three percent or more in shaft horsepower. The high speed of airflow is dictated by the fact that light weight gas turbines need the fewest possible compressor and turbine stages, which leads in turn to relatively higher speed of flow past the blades.

► This "cascade" test is one of many ways in which Wright Aeronautical Laboratories help along the "Jet Age" . . . through never-ending probing, proving and improving of all parts and materials essential to efficient jet-engine operation.



POWER FOR AIR PROGRESS

WRIGHT

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American's Airplane Cleaning Arouses Industry Interest

Across the country hundreds of "Minute Car Wash" businesses have sprung up in the last few years. With the ever increasing efforts to insure passenger appeal, American Airlines has turned to its own version of the minute car wash to keep its fleet of Douglas DC-6's and Convair Liners a shining example of cleanliness.

At New York alone, American quick-washed over 3,600 airplanes in the period between April and October of this year. Peak activity for any month was in September when American's fleet service group washed 839 planes. Last month American moved its aircraft washing activities indoors at New York in an attempt to carry on the cleaning program through the winter months.

Facts and Figures

The scope of this accomplishment in plane washing can best be realized with some typical figures. With a four-man crew this new cleaning process completes a DC-6 in 40 minutes, a Boeing Stratocruiser in one hour. A two-man crew washes down the Convair 240 in forty minutes. Total material cost for each plane wash averages about \$6.

American's crews have already been called on to clean some of Pan American's Boeing Stratocruisers and have consulted with many other airlines who have been attracted by the record. Among the airlines adopting or considering the adoption of this type cleaning, all of whom have reviewed American's operation, are United Air Lines, Northeast Airlines, Northwest Airlines, Eastern Air Lines and Pan American.

Originally planned and proved in New York, the cleaning process has been adopted throughout American's system with cleaning now being done at Los Angeles, Fort Worth, San Francisco, Newark, Boston, Nashville and Washington—and Chicago is scheduled for the near future. With the coming of winter weather a sizeable group of planes formerly handled in New York are now being cleaned at the stations located in the warmer climates.

Using an emulsion cleaner and solvent combination American has been able to completely eliminate the laborious and expensive practice of manually polishing airplanes. In addition to saving money by keeping airplanes out of service for a minimum of time and yet assuring clean ships, maintenance people have found it easier to conduct inspections in places which formerly gave trouble. Nacelles, landing gears and similar areas can be inspected more thoroughly and easily.

Keys to the cleaning process are an emulsion cleaner produced by the R. M.

Hollingshead Corp. of Camden, N. J., and a non-crazing solvent made by Standard Oil Co. of New York. The emulsion cleaner is Hollingshead 71079B and the solvent is Olean, a type of kerosene.

Effective Combination

With this combination, effective degreasing is accomplished with minimum quantities of cleaner yet the ill-effects sometimes accompanying such processes are non-existent. Properly applied, and proper handling is important to any procedure, this combination strips dirt without leaving corrosive residue and without crazing cabin windows, a common complaint with many processes. It requires about 20 gallons of fluid, three gallons of Hollingshead emulsion with 17 gallons of Olean, per airplane. When the airplane is in the hot sun mixtures are sometimes diluted to eliminate evaporation losses and prevent the emulsion drying on.

American's cleaning procedure calls for seven parts Olean to one part H-71079B which is stored in portable 60-gallon tanks. These are heavy gauge tanks suitable for about 300 lbs. pressure, although they are not subjected to such high stresses. Actually American pressurizes the supply tanks with about 90 lbs. air pressure taken off the regular working air supply in the hangar.

Other equipment used includes dual

fluid outlets equipped with shut-off valves, a safety valve and gage on the supply tank, two $\frac{3}{8}$ " or $\frac{1}{2}$ " emulsion supply lines, equipped with G. M. number 120 spray nozzles, two 100-200 ft. high-pressure hoses and couplings, $\frac{3}{4}$ " or 1 inch, for water supply and finally a water pressure pump capable of delivering 125-150 lbs. of water pressure during the rinsing operation. The G. M. nozzles are made by G. M. Company of Long Island City, N. Y. and are purchased with a six-inch shank nipple which American replaces with a 4 ft. shank nipple.

For optimum protection of the working crew, the men are supplied with acid and oil-proof knee-high boots, aprons, and gloves. Cotton stockings are used inside the boots. Goggles or face masks and a cap are also used. Aerostands used for reaching the empennage and high fuselage points are equipped with sand surface steps or other safety-type finishes to prevent slipping.

Application

When a four-man crew is used, two men are assigned to the emulsion spraying and the other two to rinsing operations and application of Penetone. One pair of workers is assigned to each side of the airplane. Starting in the nacelles and at the landing gears, the crew sprays these areas, the centersection belly, underside of wings and flaps, with flaps extended, and outward to the wing tip. This is accomplished simultaneously on both wings.

Meanwhile the other men, using mop squeegees, apply Penetone number 427, a heavy duty carbon remover, to carbon



Looking Ahead—This group of United Air Lines pilots, along with 45 others, recently spent a day at Cal-Aero Technical Institute in Glendale, Calif. where they were briefed on jet and rocket engine principles. The day included a class room review of principles, "looking over" various model engines in the shops and watching a jet engine test cell run.

When Time is the Essence...

...order from **Airwork**

AND HERE'S WHY!

Knowledge • Airwork's complete knowledge of parts usage enables us to screen every order. This protects you against:

- Superseded parts — Obsolescent parts — Overstocking

Inventory • Airwork's complete inventory of factory-new parts insures "off-the-shelf" shipments within 24 hours. And —

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Airwork Corporation distributes the following aviation products: Bendix, BG, Champion, Continental, Jack & Heintz, Packard Cable, Pesco, Pratt & Whitney, Romec Pumps, Thompson Products, Titeflex, and U. S. Rubber.

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OPERATIONS-MAINTENANCE

deposits on nacelles, wing leading edges and similar points. Using Aerostands the men with the emulsion sprayers coat the top side of the wings and flaps working back to the fuselage. The application of carbon remover precedes the emulsion application again.

The men who have applied the carbon remover handle the high-pressure water lines and, with the stands, start rinsing down the top of the wings, flaps and nacelles, the underside of the same areas and the landing gear and nacelles. For maximum effectiveness rinsing is always started at the wing tip and worked toward the fuselage. While this is being done the emulsion sprayers are at work on the lower half of the entire empennage and fuselage, nose gear and then the rudder and vertical stabilizer, from bottom to top. Then the tops of the stabilizer and finally the entire upper half of the fuselage from tail to nose are emulsion sprayed.

Finishing Off

Once again the water sprayers move in Aerostands rinsing the top section of the empennage and the fuselage from tail to leading edge of wings. Stands are moved to the nose of the ship and rinsing of the forward fuselage to wing leading edge is accomplished. This is followed by a rinse of the lower fuselage and empennage surfaces and a final rinse of the entire fuselage to clear away any remaining emulsion. The cleaners check that there are no rainbow marks or milky streaks.

When time is short the supervisor allocates work accordingly. If only 20 minutes is available the crew generally washes wings, nacelles and gears. Care is exercised not to leave emulsion cleaner standing on the aircraft for long periods.

Safety First

Using this procedure, which was established by the engineering and maintenance departments following laboratory and practical tests of many systems and materials, American has cleaned as many as 32 airplanes in one day at New York. The average is about 25 per day. Ed Landwehr, who heads up this important function at AA, points out that he is accomplishing about three times as many operations with 74 men as he did a year ago with 116.

Much of the success of this program is directly attributable to the care of the working crews. As is always the case, safety is a primary factor. Cleaners are trained to avoid getting fluids in pitot tube vents, static vents, fire extinguisher openings, or onto hot engines. Selection of wash areas insures that cleaning fluids do not leave slippery ramps which might make brakes ineffective.

American has set the pace in rapid aircraft cleaning and the practice is spreading fast.

THE MOST SIGNIFICANT STEP FORWARD

In the History of Aircraft Ignition

**BENDIX
SCINTILLA**

LOW TENSION IGNITION SYSTEMS

The name Bendix-Scintilla has long been synonymous with the finest in aircraft ignition equipment. The highly specialized knowledge of design, development and production techniques which earned this reputation has been compiled through more than 25 years of experience. With such a background it was only natural that Bendix-Scintilla should introduce a revolutionary improvement in this field. Scintilla engineers turned to an entirely new concept, the Low Tension System. In this way they eliminated many of the difficulties encountered with conventional installations right at the start, confining high voltage circuits to very short leads between the transformer coils and spark plugs.

The superior performance of this Low Tension System is ample proof that their reasoning was correct. To modernize your engines, whether they are in service or on the drawing boards—equip with Low Tension Ignition Systems by Bendix-Scintilla.

- Product of the most trusted name in aircraft ignition.
- Freedom from the troubles encountered with high voltages . . . distributor flash-over, heat, acids, oxides, moisture,

condensation, corona, insulation breakdown, capacitance loading and electrical losses.

- Superior ability to fire spark plugs with low leakage resistance caused by conductive surface deposits.

- Greater freedom from radio interference.
- Reduction of as much as 65% in spark plug erosion.
- Affected less by weather or altitude.
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Handle 250 Varied Tasks:

Business Machines Speed Airlines Accounting Work

The two airline departments with which the public has virtually all of its contacts are traffic and sales and operations, but behind the scenes, totally unknown to the average air traveler, is another department without which all airline activities would quickly and completely bog down.

This backstage operation is the accounting department, which handles the formidable volume of paper work accruing from the daily sales, the payrolls, the inventories and the intricate assortment of services that have their culmination in the transportation of persons, mail and property.

An outstanding example of such organizations is United Air Lines' accounting department, which, through extensive use of business machines, handle about 800,000 so-called "transaction" papers monthly with a personnel of 400, or about 4% of the company's total working force.

These papers, including purchase orders, bills to customers, time reports, reports on ticket sales and other documents stemming from the economics of a \$90,000,000-a-year business, can't be merely shuffled and filed away. They have to be verified, computed, recorded, classified and finally summarized for the benefit of management.

Inventory Summaries. Take just one routine accounting chore—inventory summaries. UAL's stores contain 60,000 different items, and each addition to or subtraction from this stockpile systematically is noted, along with the costs involved. Quantities on hand are checked weekly to keep items from becoming depleted.

Then there's the matter of getting 10,000 pay checks ready every two weeks for delivery to employees along a 10,700-mile route system extending from the Atlantic coast to Honolulu. Rates of pay must be computed for each check so that specific labor costs are revealed; intricate taxes must be figured and deducted, along with payments for company insurance and other assessments.

How 400 people can keep up with all this, in addition to dozens of other duties, lies in mechanization—IBM business machines, which perform some 250 separate chores of accountancy.

High Utilization. United has 70 of these machines, 29 in San Francisco and 41 in Chicago and has built up utilization on the machines to better than 80% of the work day, as against a standard level of 60%. United's IBM utiliza-

tion was below 50% in 1947, when various clerical jobs previously done manually in the field were transferred to Chicago.

Several routine manual jobs in the personnel, inventory and other depart-



BY MEANS of production charts such as the one shown here, United Air Lines is able to graph daily utilization of its business machine to tenths of an hour, thereby achieving high utilization. Shown examining the chart are C. H. Blanchar, comptroller, and J. C. McAbee, manager of machine accounting.



MANAGER OF United Air Line's machine accounting section, J. C. McAbee, left, examines flight statistics as they emerge from one of the numerous machines used by the company to keep track of its flying activities. His assistant, John Brock, holds key punch-cards by which data are fed into the machine. Machine is in company's headquarters in Chicago.

ments also were shifted to the machines. To keep tab on stocks, for example, each inventory analyst once had to thumb his way slowly through 5,000 cards. This tedious and not always accurate thumbing was replaced by weekly IBM inventory control reports. This new method of inventory control permitted stock reductions that eventually totalled more than \$2,000,000.

Clear savings of \$279,226 were credited to the accounting department in 1947, and further mechanization and centralization, plus other clerical streamlining, saved an added \$76,977 in 1948.

Many Jobs. Achieving 84% utilization during the first eight months of this year, United's IBM machines in recent weeks have operated steadily throughout nine-tenths of the work day. This would not be exceptional utilization for a business in which large amounts of uniform documents are processed day after day, but it is considered noteworthy for United because of the 250 different jobs for which the machines are used.

Timetable scheduling of all work units is chief among the techniques by which UAL keeps its business machines busy. Hard and fast deadlines are set for incoming material to be fed to the machines, and lunch hours and rest periods of machine operators are staggered to maintain an uninterrupted flow of work. Daily records of machine usage are kept to tenths of an hour, and this information is graphed monthly for analysis of virtues and defects.

CAA OK's Flight Simulator For Semi-Annual Crew Checks

Pan American Airways has received CAA approval for the use of the Curtiss-Wright flight simulator in carrying out the semi-annual crew checks which were formally conducted in flight. Total required checkout time in the airplane has been reduced between 30 and 45 minutes with a saving of about 75% in training expenses. This is the first time that CAA has approved substitution of simulator time for actual flight time in this work.

PAA has now been operating the flight simulator for 14 months and during that time logged 2,675 training hours, completing the check out of 45 captains, 38 first officers and 6 second officers. Of this time 174 hours have been used in training crews for American Overseas Airlines. British Overseas Airways will also check out 36 crews on the simulator.

Initial check out time per crew member in the simulator has been 4.2 hours as compared to 12.7 hours per person for checking out Constellation crews in the airplane. Time substitution in the simulator is not hour for hour. Crews are generally required to spend more time in the trainer than would be required in the aircraft itself.

CAA Plans Consolidation Of Certification Staffs

CAA is considering the possibility of shifting engine and propeller certification from the regions, where it is now handled, to Washington. CAA plans on moving the certification staffs from Chicago and New York in order to provide a single centralized authority in this important function. If it proves impractical to make a shift of this type, Washington will be insured direct control over field policies and activities by moving of key personnel while some activities remain regional.

NACA to Conduct High Energy Fuels Research

A new laboratory for research work in high energy fuels is being constructed at Cleveland, Ohio, by the H. K. Ferguson Company for the National Advisory Committee on Aeronautics. The facilities, scheduled for completion on December 1, will contain four test cells, 12 chemical and physical laboratories, shops and utility rooms.

The entire building is constructed of structural steel, concrete and masonry designed to withstand explosive forces. A special segregated portion of the building houses the synthesis of high energy propellant fuels, the processing of spontaneously inflammable elements and substances requiring a dry atmosphere.

Among the Suppliers

David Lewis, formerly with Noma Electric Corp., has been appointed general sales manager of the **Lycoming-Spencer** division of **Avco Manufacturing Corp.**

Dan B. Haughton, a seven-year veteran of Lockheed Aircraft Corp., has been elected president of the **Air-quipment Co.**, a Lockheed subsidiary. Haughton joined Lockheed in 1939 and for the past seven years has been assistant to the vice-president of manufacturing. He succeeds **Newman L. Smith** who recently resigned.

Other changes which followed this move include the promotion of **B. C. Monesmith**, former works manager, to succeed Haughton at Lockheed; appointment of **G. A. Fitzpatrick** to the position of works manager; and **Herb Caldwell** to succeed Fitzpatrick as superintendent of the F-80 projects. **J. W. Armstrong**, formerly assistant superintendent of P2V project, has been named superintendent.

Flottorp Manufacturing Co., Grand Rapids, Mich., which has announced a new armor-coated propeller for all types

of light aircraft, has appointed **The Lee Smith Co.**, 6363 Wilshire Blvd., Los Angeles, as its west coast factory representative for the states of Washington, Oregon, California, Nevada and Arizona. . . . **The Frank W. Taylor Co.**, 4508 E. Genessee St., De Witt, N. Y., has been appointed representative for **Canon Electric Development Co.**, Los Angeles, to handle the company's connector lines.

Richard Cutts, Jr., formerly assistant manager of sales for the **General Electric Meter and Instrument Divisions** at Lynn, Mass., has been named manager of sales for the **Central Station Divisions** of **G-E's Apparatus Department**, with headquarters in Schenectady, N. Y. Other G-E appointments are: **Neil Curie, Jr.**, from manager of manufacturing to administrative assistant to the general manager; **Ernest E. Johnson**, from manager of engineering to manager of engineering, Large Apparatus Divisions; **Byron A. Case**, from assistant to manager of engineering, to manager of engineering, Small Apparatus Divisions; **Frank T. Lewis**, from manager of manufacturing, Aeronautic and Ordnance Systems Divisions, to manager of manufacturing, Small Apparatus Divisions; **Clarence H. Linder**, from assistant manager of manufacturing to assistant to the general manager. **C. W. LaPierre** has been promoted from assistant manager to manager, **Aircraft Gas Turbine Divisions**, to succeed **Carl A. Salmonsén** who has been named manager of manufacturing, Large Apparatus Divisions.

FOURTH ANNUAL

Air Transportation Institute

January 10 through
January 27, 1950

(Professor L. M. Homberger,
Director)

Held for present and prospective executives in all fields of aviation and air transport throughout the nation—with the cooperation of the Civil Aeronautics Administration and the Air Transport Association of America.

Forty outstanding air transport leaders such as D. W. Rentzel, Administrator, CAA; Russell B. Adams, Member, CAB; Major General William H. Tunner, Military Air Transport Service; J. H. Carmichael, President, Capital Airlines; M. F. Redfern, Vice President, ATA; H. F. Law, General Superintendent, New York Airports; C. W. Jacob, Vice President, American Airlines, will discuss vital problems in a three weeks, full daytime Institute. Field trips to airport and repair facilities. Approved by Veterans Administration.

Final Registration January 5, 1950

For descriptive booklet, information and room reservations, write or phone Dr. L. M. Homberger

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1901 F Street, N.W., Washington 6, D. C.
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Airborne Instruments Lab Centralizing Office Space

Airborne Instruments Laboratory has contracted for a five-year lease on a building now under construction near the AIL facilities in Mineola, Long Island. The new two-story building will give AIL 10,500 sq. ft. of new space.

Upon completion of the new facility, Airborne's administrative offices will be moved from 1527 Franklin Ave., Garden City, and later in the spring of 1950 the facilities on Country Road will also be vacated in favor of the centralized set-up.

—TECHNICAL LITERATURE—

Star Data: The Dept. of Interior, Bureau of Land Management, has released "The Ephemeris 1950," the 41st edition of this publication providing data on the sun, Polaris and other selected stars. Surveyors and navigators use this guide to determine meridians, positions, etc. Price 20c from the Government Printing Office, Washington 25, D. C.

Stainless Steel Threads: The Cooper Alloy Foundry Co., Hillside 5, N. J., is publishing a folder on threading of stainless steel titled "Don't Fear Threading Stainless." Includes case studies giving speeds, tool angles, coolants and other pertinent data.

Aluminum Ladders: Aluminum Ladder Co., Worthington, Pa., is circulating a 12-page folder describing their "Alco Lite Aluminum Ladders for Industry." Describes folding step ladders, warehouse ladders and straight ladders. Weights of ladders and general specifications are included.

Paint Spraying: The Electric Spray Co., Sheboygan, Wisconsin, has available a 24-page, pocket-size booklet entitled "Hand-book for Paint Spraying." Describes paints used, equipment choice, possible troubles, causes and remedies, etc.

Strain Gages: The Baldwin Locomotive Works, Philadelphia 42, Pa., is circulating a 12-page booklet describing their Baldwin SR-4 bonded resistance wire strain gages. Illustrated by line drawings distinguishing 11 types of gages and listing 102 standard gages. Includes classifications by types of wire, cementing materials used, electrical resistances, gage factors, dimensions and prices.

Steel Working: American Pullmax Co., Inc., 2627 No. Western Ave., Chicago 47, Ill., has a six-page folder describing their line of sheet steel and plate working machines including seven different sizes of machines for cutting mild steel up to 14 gauge (in small models) or to 11/32" (for the Major model). Describes attachments for straight, circle and slot cutting as well as beading and folding.

Standards Report: The National Bureau of Standards, U. S. Dept. of Commerce, Washington 25, D. C., has released Technical Report 1375 describing "A Photo-Grid Technique for Sheet Metal Elongation Measurements." Describes an improved method for establishing the behavior of sheet metal during forming.

Plastic Coatings: Better Finishes and Coatings, Inc., 268 Doremus Ave., Newark 5, N. J., has released a 24-page, 8½ x 11 inch book entitled "How Canadair Uses Liquid Envelope." The booklet is a pictorial record of the metal fabricating and assembly operations in the Canadair plant where a peelable, protective plastic coating cuts scrap losses and improves product quality.

Power Tools: Independent Pneumatic Tool Co., 175 State St., Aurora, Ill., has published a new catalog, E-2, covering the Thor universal electric portable power tool line.

Extra Section

By William D. Perreault



FRANK CASSEL, Colonial Airlines engineer, suggests that the CAA monthly summary of hazards reports would be more effective if they included a numerical list of the aircraft of each type in use during the period. Under the present set-up, the report, which acts as a mechanical experience interchange between the scheduled airline operators, lists the percentage of total troubles allocated to each type of aircraft. This picture is apt to be misleading without some indication of the relative number of aircraft operating in each category. Since CAA compiles such a list for departmental use inside CAA each month, this might be a simple and useful addition.

Our congratulations to American Airlines for its advertisement in Life magazine of November 21. The four-color ad featured artist John Falter's painting of American Airlines' inspector Harold T. Rogers. Hal has been within the business for almost 20 years and with AA since 1940. When this writer started in AA's maintenance department as a virtual novice, Rogers was a good man to turn to for a helping hand. The ranks of American's maintenance department are spotted with many high-caliber men.

Mechanics and engineers who have been using the aircraft tube and pipe fitting chart originally prepared by The Parker Appliance Co. will want to receive the revised chart which is now available. The four-page chart illustrates and identifies 266 types of AN, AC810, AC811, AC-type hose and pipe and NAF fittings. The reverse side of the new shape chart lists data on identification, sizes, materials and emergency interchangeability. Copies available on request from The Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio.

Seems we've been using the name Teletype as a common noun while actually it's a trade mark of the Teletype Corporation. It was registered as a trade mark in August, 1925, by a predecessor company. At present it is registered and used as a trade mark in most of the principal countries of the world to denote printing telegraph apparatus manufactured by the Teletype Corp. When referring to associated equipment of other manufacturers, we are told, "teletypewriter" or "printing telegraph apparatus" should be used.

Jerry Lederer, president of the Flight Safety Foundation, reports that USAF studies have shown that rats and guinea pigs will die from high-frequency noise because of their insulating fur. The high-frequency noise is turned into heat energy in the animals body and because this is not dissipated, it coagulates the body proteins and causes death. With an efficient body cooling system, man can stand energy levels 120 times greater than rats. These findings bear on earlier studies made to determine the effect of jet engine noises on pilots and others. Lederer captioned this news item: "No whiskers for jet airmen."

At Oklahoma City CAA has been making additional studies of safety belt effectiveness. Conclusion: It is advisable to provide shoulder harnesses for crew and passengers. At speeds of seven mph, such as in taxiing, the force of a sudden stop will throw the occupant against the seat ahead, or against the instrument panel in the case of the pilot. CAA is suggesting that manufacturers consider this matter in future work.

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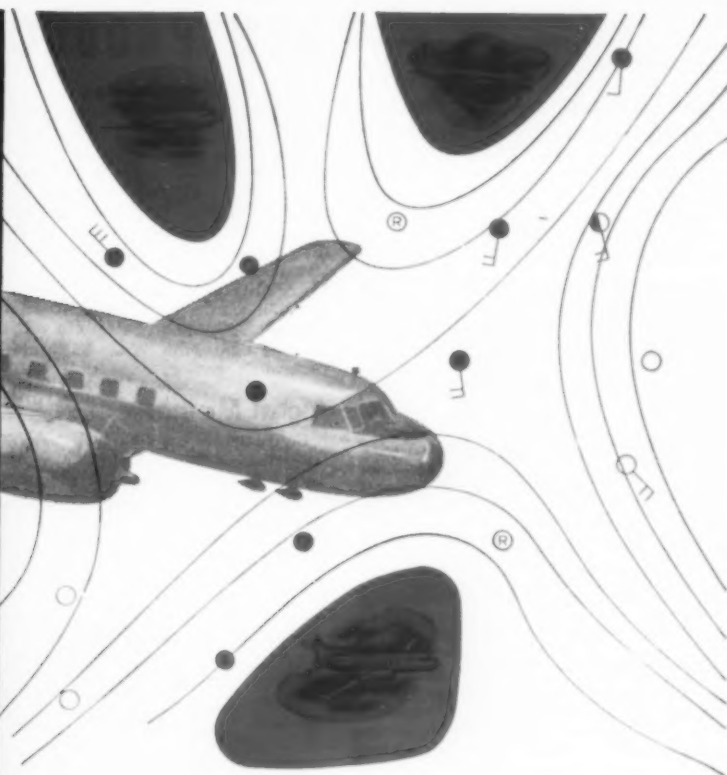
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TION



Making all
Weather....
Good Flying
Weather



● The greater number of flights being completed on schedule today reflects the advances being made in year-round weather control. Airlines, through their skilled meteorologists, now know more about the weather than ever before, and with the use of the most modern facilities and equipment are making their service increasingly independent of the weather.

● Before he takes off, the airline pilot knows the weather fronts to avoid along the flight route...and the tail-winds that will help him make up time consumed in flying above or around storm areas. A pre-flight weather analysis...based on the Weather Bureau's and the airline's own meteorological studies... gives him this valuable information.

● To help the pilot utilize to the utmost the information he has at his finger tips, airlines are supplying him with the latest in facilities and equipment—the best in ships, engines and instrumentation. Another contributor, the C.A.A., now operates approximately 100 beam landing-approach systems in major airports throughout the country. These systems have lowered the weather ceiling for the airlines...allow more "flying" days.

● Sperry *has been* and *is* contributing to all-weather flying... flight instruments for attitude and direction...the A-12 Gyropilot* for smoother flying even in turbulent air...the Automatic Approach Control for bringing sky giants to less than 100 feet of the runway no matter what the weather. And Sperry research pilots at the controls of Sperry's flying laboratories are taking off, day and night, when flying weather is at its worst, to study, perfect and devise new means of making all weather good flying weather.

*Trademark Reg. U. S. Pat. Off.

SPERRY

GYROSCOPE COMPANY

D.VISION OF THE SPERRY CORPORATION
GREAT NECK, NEW YORK

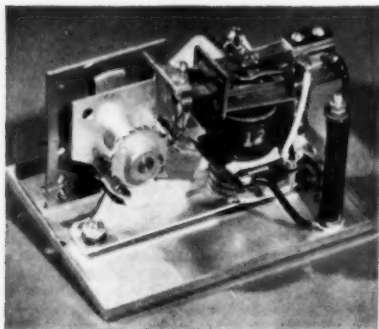
NEW YORK • CLEVELAND • NEW ORLEANS • LOS ANGELES • SAN FRANCISCO • SEATTLE

DECEMBER 15, 1949

NEW PRODUCTS

Light Flasher

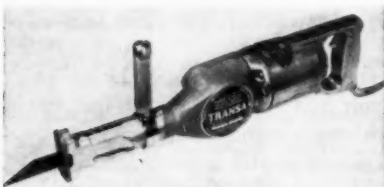
The Signet Development Co., 188 West Randolph St., Chicago 1, Ill., is marketing a light-weight position light flasher available for private craft. The one-pound unit bears CAA approval for installation in any type aircraft or helicopter using a single circuit navigation



light. The Signet position light flasher is available in four models for 6, 12, 24 and 36 volt operation. Units are unconditionally guaranteed against defects in workmanship and are rated for a life of approximately 100 operating hours. The company operates an exchange policy making trade-ins reasonable. A Signet Model 1000S three-way switch can be used with the assembly to provide steady lights instead of the flashing sequence.

Cutting Tool

Transa, Inc., Dept. MTN, Suite 440-445 Gateway Bank Bldg., Minneapolis, Minn., has developed a reciprocal gun-type saw which will cut through any material from rubber to stainless steel. The stroke of the cutter is adjustable to a full two inches and special guides



for the blades, from 1/2" to 1", eliminate whipping or snapping of the blades. The guides are also used as sights in following a line. The handle of the tool is adjustable with a 360-degree swivel to provide ease of operation. The Transa saw can be driven by an electric drill, air drill or flexible shaft. The complete unit, including power drill, sells for \$110.50 while the attachment alone sells for \$67.50.

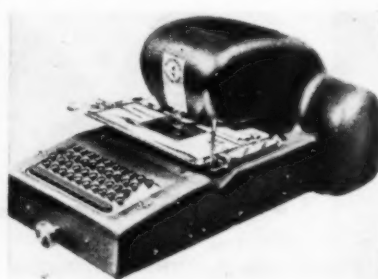
Linear Actuator

Airborne Accessories Corp., 25 Montgomery St., Hillside 5, N. J., has designed an improved model "Lineator," an electrically-operated linear actuator incorporating mechanical synchronizing to permit pairs of units to operate in unison regardless of load variations.

Improvements in the new unit, in addition to the synchronizing feature, include a revised non-turn device capable of absorbing the full actuator torque in the event of striking a positive over-travel stop at full voltage with no resisting load, improved radio noise filter and increased motor power and duty cycle rating. The "Lineator" may be used wherever straight-line motion is required to open or close doors, position control surfaces, regulate adjustments, elevate rolls, etc. The unit uses a 26 volt, DC explosion-proof reversible motor.

Metal Marker

Cadillac Stamp Co., Dept. AV-3, 2138 Riopelle, Detroit 7, Mich., has announced a new form of electric typewriter, the Automark electric metal marking typewriter. Designed for the detailed marking of name plates, this all-electric automatic table-feed typewriter can also be adjusted to mark



leather, wood, plastics and even steel up to 1/2" thick, prior to hardening. Type sizes 1/32" to 1/4" mounted on type wheels which are easily interchangeable. Entire operation is as simple as typewriter operation with no wheels to turn nor levers to pull. Operators can be trained in a few minutes.

Zoning Paint

Thomson-Porcelite Paint Co., 330 Race St., Philadelphia 6, Pa., is marketing Porcelite Traffic Zoning Paint, a long-wearing paint for use on floors, pavements, etc., for marking purposes. It can be applied by hand or machine and dries hard in 20-30 minutes. The manufacturer claims that it gives twice the wear of ordinary marking paints thus cutting down maintenance costs and retaining color. A special non-bleeding primer is available for use on creosote block surfaces and other applications.

Inquiries about equipment on this page may be sent either to AMERICAN AVIATION or direct to the manufacturer.

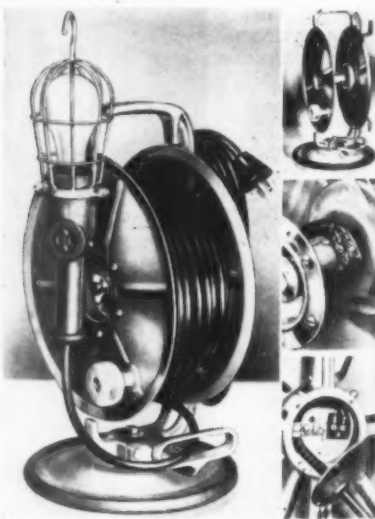
Readers looking for sources of special equipment are invited to write to AMERICAN AVIATION's equipment editor. Every effort will be made to provide information on manufacturers and suppliers who are in a position to furnish or develop needed airborne or ground equipment.

Foamite Extinguisher

American-LaFrance-Foamite Corp., Elmira, N. Y., has introduced a complete new line of 2 1/2 gallon Silicon Bronze fire extinguishers with monotype construction shells. Approved by Underwriters and Factory Mutual Laboratories, and available in foam, soda-acid and anti-freeze water types, the new extinguishers have a shell strength of 1400 lbs. psi, are 65% stronger and 2 pounds lighter than the drawn shell models they replace. Holes in the extinguisher skirt provide a point where a bar may be inserted to hold the shell firmly while recharging.

Port-O-Reel

Industrial Electrical Works, 1509 Chicago Street, Omaha 2, Neb., has announced a new model Port-O-Reel weighing only 9 pounds without cord. The reel will accommodate 150 ft. of number 16 two-conductor cord and proportionate amounts of other size wires. The assembly is 17 1/2" high and uses an improved frame design for increased strength. The assembly can be pur-



chased with or without cord and special screw binding posts permit quick attachment of any type cord. A double constant-contact collector ring enables the cord to be used while the reel is turning. The manufacturer claims cord life can be increased as much as five times by use of the Port-O-Reel.

Anti-Dazzle Shield

Polalite Corp., Whitestone, L. I., N. Y., is marketing Polalite Shields which can be placed over any standard fluorescent tube to provide protection against possible breakage of the light either in use or in handling. It also permits light from the fluorescent tube to pass downward, and outward to an angle of 45 degrees to light the room without impairment. Prices range from \$2.49 for a desk-lamp sized tube; \$2.98 for 24" tubes and \$3.98 for the 48" tube.

AMERICAN AVIATION

Similar to Telephone Weather Service:

American to Give NY Trips' Status by Tape Recordings

By ERIC BRAMLEY

In many cities it is possible to pick up the phone, dial a number and get, from a recording, the latest weather information. In New York in the near future it will be possible to obtain in the same manner the latest American Airlines' flight information—whether trips are departing on time, or whether there will be cancellations.

Being installed for American is an automatic flight information machine and the company has obtained from the New York Telephone Co. the announcing and control equipment, together with a sufficient number of lines to handle all the calls that will be made simultaneously. This is said to be the first airline use of an automatic machine for this purpose.

In periods of doubtful weather, American, like all other airlines, is faced with a substantial increase (about 33%) in incoming phone calls, because on top of the usual requests for reservations and information are piled the calls from ticketed passengers wanting to know if their flights are leaving on schedule. In addition, if flights are delayed, AA's reservations force must inform the passengers, and this can take considerable time when you consider that five DC-6's might involve 250 people.

To Relieve Phone Load

When the device goes into use in the near future it will be, at least for the initial period, on an experimental basis, but AA believes that when it catches on it will substantially relieve the load on the other telephones. The company stresses that this is an added service for passengers and that it is not discontinuing any of the usual procedures, such as the calling of passengers. And passengers may, if they desire, still call reservations in the usual manner for flight information.

The new system involves use of a voice tape announcing machine. As flight conditions become known, AA flight control puts them on the tape, and this tape can be changed quickly as conditions vary. Thus, a passenger can dial (number has not yet been selected) and within two minutes get information on a flight without waiting to get through to the reservations table, as he might have to do in a peak period.

The recorded voice he will hear will come direct from flight control, and this will eliminate the possibility of individual interpretations which might creep in when the information is passed through several hands before reaching

the customer. Specific data will be given for a two-hour period, with a "guide" as to expected conditions beyond that time.

Eliminates Trip Numbers

AA's research has shown that the average passenger cares very little about trip numbers, but relies more on time of departure. Therefore, time will be given in the announcements, together with points served by the flight, expected departure, etc.

Asked whether a passenger might not have to wait for a considerable period before his flight came up on the tape, AA officials pointed out that 67% of the trips out of New York are non-stop and that the average flight has only 3.2 legs (a leg is defined as that portion of a flight between a scheduled take-off and the next scheduled landing). Therefore, because it will not be necessary to list a long string of intermediate stops, announcements will be short. In good weather, the tape will merely note that all operations are routine.

AA has been working toward this tape-recorded announcement system for about five years. Not only did the

company have the idea, but it has also been suggested by a number of passengers. AA realizes that it has an educational job on its hands, and will do it through stuffers in ticket envelopes, newspaper ads and other means. The company believes that once this service catches on it will be preferred over calling reservations in the usual manner, because information will be available faster and the public will have a feeling of confidence in receiving data direct from flight control.

And although AA officials are confident that the experiment will succeed, they're reluctant to say at this time what it might mean in the future—whether they'll ever be able to discontinue calling delayed passengers, whether the system might be used in other cities, etc. However they believe that as an added service to the passenger, it will ring the bell.

American and TWA Get Coach Approvals

The Civil Aeronautics Board last week placed its official blessing on the proposed operation of transcontinental coach flights by American Airlines and Trans World Airline and thus paved the way for a fare experiment which may bring about an eventual downward re-pricing of airline transportation.

Publicly announcing its approval, CAB gave a green light to coach proposals which are unique in the respect that they will permit low-fare transportation on the biggest and fastest equipment possessed by either line. Starting out initially with DC-4 equipment on December 27, American will switch to DC-6 aircraft in April, 1950, in a move that will be matched by TWA's substitution of Constellations.

Chiefly responsible for the Board approval, which was the last hurdle for both lines to overcome, was American's theory that the DC-6 coach plane was to contain a sufficient number of seats so that the gross revenue from coach flights would approximate the gross revenue from regular flights at comparable load factors.

Thorough Planning

Actually, CAB's go-ahead signal was a tribute to the thoroughness with which American planned its operation. Two weeks before the tariff was to be acted upon, the line submitted its now well-known "supporting statement" of facts and theories and it carried considerable weight in the final CAB decision.

Also, despite the similarity of the two proposals—American's and TWA's—there was a marked absence of cooperative thinking by officials of these carriers, prior to the Board ruling. Warren Lee Pierson, chairman of the board of TWA, asked the Board to suspend American's proposal because it contemplated use of



Advertising Posters made in Monarch Air Lines' publicity department have been used in cities along its routes to tie in air travel with various events of interest to the public. Here, Helen L. Burke, executive secretary of the Colorado TB Association, is shown receiving the latest poster from Earl Kimmel, manager of traffic and sales for Monarch.

1/2 FARE FAMILY PLAN

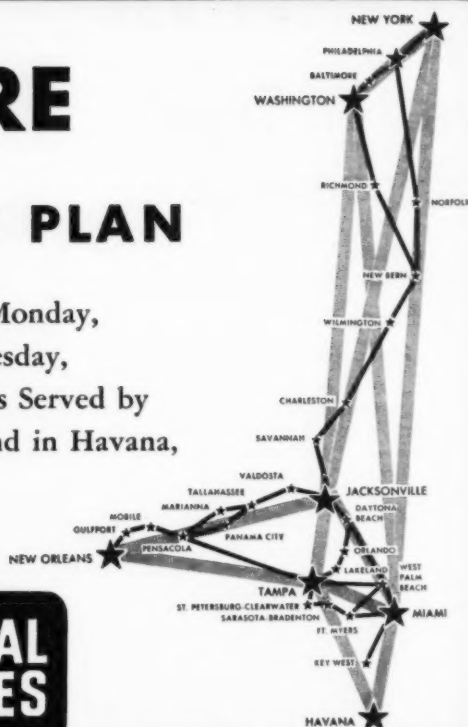
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TRAFFIC & SALES

first class equipment (DC-6) in a second-class service.

Addressing a letter to CAB Chairman Joseph J. O'Connell, one week before CAB approved the proposals, Pierson said if such a policy as American's were authorized, air transportation as a whole would suffer from, rather than benefit by, experimentation in the coach field.

Opposing American's tariff also, were Capital Airlines, a DC-4 coach operator, and Standard Air Lines, a large irregular carrier.

CAB, however, not only was sold on American's idea to the extent of approving it, but actually departed from two well-defined standards adopted in its statement of air coach policy, last September. It is permitting American and TWA to name their own departure times for coach flights, and is permitting the experiment for the whole of 1950, and not just until June 30, the designated expiration dates for existing coach tariffs.

No Traffic Peaks


In transcontinental service, the Board said, there appears to be no well-defined traffic peaks, both daytime and late evening departures being provided in the present schedules of the carriers. The reason for not imposing time limitations on American and TWA for their proposed transcontinental coach operations was due to the absence of a well-defined peak, and accordingly, to the Board's desire to enable the carriers to schedule the coach flights in such a way as to minimize diversion of traffic from their regular services.

Initial Schedules

Eyes of the industry will now be focused on the development of American's and TWA's programs. American announced that it has solicited bids for the modification of three of its 52-passenger DC-6's into aircoaches that will carry 70, and also announced its initial schedules. West-bound flights will leave Newark at 9:30 p.m. and arrive in Los Angeles at 10:29 a.m. (local time), after a stop at Chicago. Eastbound departure from Los Angeles will be at 6:30 p.m. with arrival in Newark at 10:57 a.m.

TWA, in quarter-page newspaper ads, announced transcontinental schedules of 14 hours and 40 minutes with New York departures scheduled for 8:30 each evening.

Thus, all is in readiness for a fare experiment which will eventually affect the entire industry. Operating cost, and service advantages were responsible for CAB approval of the DC-6 and Constellation proposals. These same factors plus coach profits may be responsible for a general lowering of airline fares throughout the country.



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Over the Counter

By Eric Bramley



Sales Promotion

WE attended the dinner which TWA gave on Nov. 28 at the Commodore Hotel for the travel agents of metropolitan New York, and it was a deluxe affair. The turnout surprised even TWA—over 300 agents attended. Short and snappy speeches were given by **Ralph Damon**, TWA president; **E. O. "Ox" Cocke**, vice president-sales, and **Bill McGrath**, general sales manager, Atlantic region. Agents were impressed with the fact that the company's top executives came out to mingle with them. It was an A-1 goodwill-builder . . . If you want a real tool to help you sell business firms on using air mail and air parcel post, get copies of the booklet just released through the **Post Office Department**, entitled "Your Business Needs Air Postal Service." We understand it was prepared by the **Air Transport Association** and the **PO**. It's an excellent job and you can get copies from **Paul Aiken**, Assistant Postmaster General, Post Office Dept., Washington, D. C.

Northwest Airlines is distributing an attractive booklet describing six package tours to Hawaii. The tours, sold only through NWA travel agents, range from nine to 11 days in length and from \$328 to \$520 in price . . . **SABENA Belgian Airlines** has available four folders describing Holy Year tours.

Pan American Airways, promoting transit business, announces that travelers from Latin America flying to Europe may stay overnight in New York as PAA guests before continuing their trip the next day. They'll receive free lodging and meals at Forest Hills Inn and transportation to and from the airport . . . Pan American has informed business firms that they may have for the asking any or all of 12 travel folders and booklets covering practically all parts of the world . . . **Western Air Lines** has issued a colorful and informative folder on its air coach service.

Traffic and New Services

AMERICAN Overseas Airlines and **TWA** have been granted permission by CAB to suspend international service at Washington for one year, but the Board deferred action on similar requests involving Philadelphia pending full public hearing demanded by the city of Philadelphia. "Uneconomic characteristics" and low load factors were reasons given by the companies for wishing to drop the cities.

Mid-Continent Airlines is concluding agreements with **Mid-West Airlines** and **Central Airlines** to provide these feeders with complete reservations and operations coverage in a number of MCA cities. These include Mason City, Rochester, Twin Cities, Huron, Sioux Falls and Sioux City for Mid-West, and Tulsa, Paris, Tex., and Texarkana, Ark., for Central . . . **Wisconsin Central Airlines** on Dec. 1 started service, two flights daily, to five Upper Michigan Peninsula points: Menominee-Marquette, Iron Mountain, Marquette, Houghton-Hancock and Ironwood.

United Air Lines on Dec. 1 started a DC-4 all-cargo operation to and from Springfield-Hartford, with schedules applicable via New York . . . **United and Canadian Pacific Air Lines** have signed an interline agreement . . . **Philippine Air Lines** has re-routed its weekly Manila-London service, cutting 15 hrs. from the trip. Routing is via Calcutta, Karachi and then to Lydda, instead of Cairo, Rome, Madrid and London. Total trip time with the DC-6 is 42 hrs. . . **Delta Air Lines** started non-stop Atlanta-Miami service Dec. 1 with 48-passenger DC-4's and will substitute 56-passenger DC-6's on Dec. 15 . . . Also on Dec. 1, Delta added a DC-6 Atlanta-Chicago non-stop . . . **Pan American Airways** will start non-stop service between Miami and Montego Bay, Jamaica, on or about Dec. 18 . . . **Northwest Airlines** has opened a new office at 523 W. 6th St., room 1140, in Los Angeles.

Tariff Notes

CAB has suspended proposed tariffs of **Pan American Airways** and **Northwest Airlines** which named 25%-reduced tourist fares between the west coast and Honolulu, and also suspended new commutation tariffs of PAA, NWA and United which named a \$2,600 charge for books of 20 one-way commuter tickets between the same points. Tourist tariffs were to become effective Dec. 1, commuter fares two days later . . . CAB ordered **United Air Lines** to cancel suspended common fares between the west coast and Hawaii . . . General commodity cargo rate structure of the scheduled airlines thrown wide open with three lines filing tariffs proposing an across-the-board 10% increase, while five other carriers were considering a reduction to meet those approved by CAB for U. S. Airlines, certificated cargo line. Proposing an increase Jan. 1 were American, United and TWA, while Eastern, National, Delta, C&S and possibly Northwest would probably reduce.

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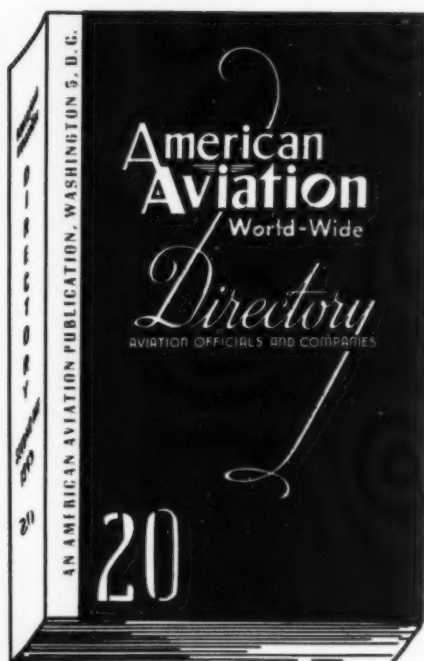
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TRAFFIC & SALES

CAB Briefs

The Board has granted permission to Northwest Airlines to set up a system of joint routings under which passengers traveling to or from the Orient may commence or terminate passage at many off-line U. S. points without an increase in fare. Orient passengers after reaching Seattle may continue eastward via NWA or may make a choice of other routes, with the same fare and stopover privileges applicable no matter what routing is chosen. Northwest also has filed joint cargo rates from any authorized airline route point in the U. S. to the Orient, and vice versa.

National Airlines has taken exception to seven points in the report of CAB Examiner Richard A. Walsh recommending that the Board issue a six-months foreign air carrier permit to Aerolineas Argentinas FAMA authorizing scheduled service between New York and Buenos Aires via several intermediates, including Havana. National disagreed with Walsh's conclusion that the traffic diversion from National by FAMA would be "rather negligible," and took exception also to his failure to recommend that FAMA's permit contain a restriction that flights must originate or terminate at a point or points in Argentina.

Compania Cubana de Aviacion, S. A., currently operating under a temporary permit between Havana and Miami, has applied for a foreign air carrier permit to operate between Havana and New York "with or without traffic stops at Washington." Cubana is a Pan American Airways affiliate.

CAB's investigation to determine whether Pan American Airways had operated common carrier service into Saudi Arabia without a certificate resulted in an order instructing the carrier to desist from conducting any operations between the U. S. and Saudi Arabia other than occasional and infrequent charter flights which have been approved by the Board. The investigation and order grew out of a complaint by Trans World Airline regarding PAA's operations under a contract with the Arabian American Oil Company.

Examiner Ferdinand D. Moran has recommended that Southern Bus Lines of New Orleans be authorized to operate four feeder airline routes in the southern Mississippi Valley, and that the Board institute an inquiry to determine whether trunkline service to Meridian and Hattiesburg, Miss., now performed by Delta Air Lines, be replaced by a feederline service performed by Southern Bus.

The Board has granted permission to American Overseas Airlines and Trans World Airline to suspend international service at Washington for a period of one year because of "uneconomic characteristics" and low load factors. Action on similar requests to suspend service at Philadelphia was deferred pending a full public hearing that has been requested by the Quaker City.

U. S. Domestic Airline Revenues & Expenses, July-Sept.

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUNDS & INDIRECT EXPENSES	NET OPERATING INCOME
American	26,780,006	23,385,875	1,203,807	426,335	1,441,467	260,800	30,599	22,741,611	11,075,435	11,666,176	4,030,394
Brantiff	3,955,404	3,126,615	597,957	60,389	72,874	30,163	57,832	3,595,835	1,791,678	1,804,157	359,569
Capital	7,382,062	5,706,269	870,735	126,086	378,166	35,099	194,630	6,665,662	3,266,674	3,398,988	716,400
Caribbean	186,186	130,625	41,660	...	8,230	749	...	199,665	88,204	111,461	-13,479
C & S	2,293,670	1,693,093	480,187	39,716	38,763	21,554	5,046	1,972,180	898,741	1,133,439	321,490
Colonial	1,394,554	1,035,149	325,528	6,577	10,950	8,807	4,897	1,177,049	594,079	582,970	217,905
Continental	1,461,421	1,025,957	356,010	8,353	22,490	8,112	22,811	1,420,812	656,903	763,908	40,609
Delta	3,882,219	2,930,021	729,120	40,574	111,196	31,976	3,618	3,804,870	1,812,616	1,992,255	77,348
Eastern	15,312,177	13,758,350	695,315	252,101	360,761	203,264	13,749	15,957,660	8,413,660	7,544,000	-645,463
Hawaiian	932,226	772,993	8,915	27,264	85,496	26,044	7,197	875,759	352,987	522,772	56,467
Inland*	813,794	656,921	135,804	4,277	9,889	6,051	...	581,973	262,750	319,223	231,821
MCA	2,001,426	1,574,986	360,394	20,765	20,114	13,495	7,199	1,796,915	810,908	986,007	204,511
National	2,675,747	2,112,160	423,720	30,497	45,926	46,641	2,428	3,186,234	1,662,898	1,523,336	-510,467
Northeast	1,933,418	1,472,129	412,145	11,374	22,174	10,312	466	1,656,142	866,028	790,114	277,276
Northwest	8,472,413	7,190,323	779,293	124,420	238,567	57,195	25,793	7,506,322	3,531,261	3,975,061	966,091
Trans Pacific	233,002	198,449	...	1	6,208	4,897	19,053	322,214	119,008	203,206	-89,212
TWA	17,720,620	15,199,762	1,305,512	344,330	502,700	172,872	105,561	15,404,282	7,733,071	7,671,210	2,316,339
United	25,942,936	22,270,987	1,573,288	463,004	1,108,790	234,406	132,062	20,981,903	9,821,857	11,160,046	4,961,033
Western*	2,441,801	1,714,834	475,059	28,043	23,017	11,430	171,887	2,109,170	1,063,925	1,045,245	332,631
TOTALS	125,815,082	105,955,498	10,774,449	2,014,196	4,507,778	1,185,467	804,828	111,956,258	54,762,683	57,193,574	13,858,823

* Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.

NOTE: Under CAB filing procedures, the airlines file a cumulative quarterly financial report for July-September in place of a separate statement for the month of September. Traffic data, however, are reported separately for each month.

U. S. Feeder Airline Traffic for September

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON MILES	EXPRESS TON MILES	FREIGHT TON MILES	TOTAL TON MILES	REV. TRAFFIC	AVAILABLE TON MILES	% AVAILABLE TON MILES USED	REVENUE PLANE MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
All Amer.	10,492	1,461,000	5,733,000	25.48	3,046	7,164	...	153,148	545,140	28.09	238,887	252,210	94.06	
Central*	56	6,000	44,000	13.64	135	...	...	685	6,461	10.60	14,787	17,344	85.26
Challenger	3,134	897,000	2,657,000	33.75	3,041	2,312	5,487	101,029	284,382	35.52	132,889	136,320	97.48	
Empire	3,383	710,000	1,896,000	37.44	1,700	1,184	...	69,034	187,141	36.89	90,219	90,480	99.82	
Monarch	3,356	866,000	2,767,000	31.29	2,492	2,229	9,879	101,611	108,037	32.98	157,152	156,840	99.80	
Piedmont	8,591	1,827,000	5,693,000	32.05	2,241	3,937	6,886	188,035	596,356	31.53	271,701	272,556	99.40	
Pioneer	9,745	2,663,000	7,812,000	34.00	6,698	3,002	7,982	285,251	826,324	34.52	324,813	323,132	99.57	
Robinson	4,613	635,000	1,646,000	38.58	1,607	...	1,369	57,230	189,373	30.22	87,058	86,110	96.92	
Southern	1,916	316,000	2,965,000	10.66	2,322	2,284	...	34,771	210,584	16.51	139,183	142,996	97.40	
Southwest	12,283	2,164,000	4,949,000	43.73	4,135	3,336	6,300	230,948	433,287	53.30	206,229	204,235	98.82	
Trans Texas	5,693	1,230,000	5,495,000	22.39	4,232	2,325	2,764	132,797	371,897	35.71	261,693	260,844	99.79	
West Coast	7,135	979,000	2,491,000	39.30	784	1,254	...	89,412	246,724	35.95	118,613	119,692	97.39	
Wiggins**	39	3,000	20,000	15.00	39	...	...	331	2,111	15.67	5,062	7,536	67.17
Wis. Central	3,816	574,000	1,366,000	42.02	1,902	2,454	...	57,185	142,578	40.11	163,072	170,130	95.76	
TOTALS	74,252	14,331,000	45,554,000	31.45	34,374	31,461	40,667	1,501,467	4,352,395	34.48	2,211,458	2,240,325	97.76	
Helicopter Air Service (Aug)***	...	...	...	...	167	...	...	167	350	47.90	2,178	2,196	99.18
HAS (Sept)	...	...	...	...	754	...	...	754	1,515	49.76	9,915	10,140	97.78
Los Angeles	...	...	...	...	3,162	...	...	3,162	10,638	29.72	27,418	29,050	94.35

* Began operations September 15, 1949.

** Began operations September 15, 1949.

*** Began operations August 20, 1949. Figures shown above for month of August are estimated.

U. S. Feeder Airline Traffic for October

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON MILES	EXPRESS TON MILES	FREIGHT TON MILES	TOTAL TON MILES	REV. TRAFFIC	AVAILABLE TON MILES	% AVAILABLE TON MILES USED	REVENUE PLANE MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
All Amer.	8,350	1,160,000	4,981,000	23.30	2,411	7,586	• • •	123,211	541,114	22.72	237,123	260,727	90.81	
Central	123	17,000	200,000	13.00	493	• • •	• • •	1,907	29,123	6.54	62,564	73,044	91.24	
Challenger	1,730	508,000	1,896,000	26.79	2,420	3,027	7,398	63,861	202,923	31.47	94,824	104,222	90.98	
Empire	2,976	660,000	2,006,000	32.92	1,662	1,968	• • •	65,035	197,948	32.85	95,535	93,372	99.14	
Mid West*	38	5,000	75,000	6.66	237	1	• • •	627	8,342	7.51	15,726	20,152	91.76	
Monarch	2,719	676,000	2,730,000	24.76	2,067	1,924	8,599	80,594	305,107	26.41	152,249	162,068	91.81	
Piedmont	8,830	1,855,000	6,136,000	30.25	2,535	4,335	7,389	191,915	642,796	30.33	292,180	298,406	97.69	
Pioneer	10,491	2,844,000	8,182,000	34.84	7,160	3,186	8,792	304,709	862,012	35.35	338,904	328,091	99.20	
Robinson	4,714	684,000	1,786,000	38.30	1,681	301	1,633	61,819	205,013	30.15	91,239	89,165	96.96	
Southern	2,109	343,000	3,800,000	9.03	3,104	3,178	• • •	39,002	240,761	16.20	159,128	168,467	94.45	
Southwest	9,899	1,792,000	4,347,000	41.22	4,064	3,023	7,247	194,222	434,392	44.71	206,755	208,460	98.79	
Trans Texas	5,147	1,188,000	5,870,000	20.24	4,649	2,129	4,625	130,786	396,534	32.98	278,955	281,790	98.79	
West Coast	4,141	568,000	2,034,000	27.93	695	681	• • •	51,961	194,996	26.65	96,847	108,052	89.66	
Wiggins	123	15,000	65,000	23.07	117	• • •	• • •	1,379	6,571	20.97	16,252	19,468	79.20	
Wis Central	3,202	479,000	1,405,000	34.09	1,976	2,347	• • •	49,334	145,226	33.97	172,445	178,157	96.69	
TOTALS	64,592	12,794,000	45,493,000	28.12	35,291	33,686	45,683	1,560,362	4,412,858	30.82	2,313,726	2,393,641	95.61	
Helicopter Air Service	• • •	• • • •	• • • •	• • •	849	Helicopter Mail Service		849	2,184	38.90	15,127	16,100	93.95	
Los Angeles	• • •	• • • •	• • • •	• • •	3,469	• • •	• • •	3,469	11,522	30.11	29,695	29,953	99.14	
* Began operations October 21, 1949.														



HIS Christmas the peoples of all nations, who depend increasingly on aviation as an artery of domestic and international commerce, owe a debt of gratitude to the U.S. Air Force, U.S. Navy and the Civil Aeronautics Administration. Their foresight and confidence made possible the development and installation of GCA at nearly 200 military and civil airports around the world.

As the pioneer developer and manufacturer of GCA, Gilfillan is proud of its part in this vital contribution to aviation progress.

Pioneer Developer and Manufacturer
of GCA for the USAF and the CAA



Gilfillan
LOS ANGELES

AIRPORTS

Including Features Formerly in AIRPORTS AND AIR CARRIERS Magazine

80 Tons Per Hour:

Lockheed Reveals Results Of 3-Year Terminal Study

As part of the program of the American Society of Mechanical Engineers' Air Cargo Day, some 150-200 members and guests visited Newark Airport where they were guests of the airport and airlines and toured the air freight facilities of Capital, Eastern, American and Slick Airways. On hand for inspection were typical cargo aircraft: Capital's Douglas DC-4, Eastern's Lockheed Constellation with Speedpak, Slick's converted Curtiss C-46 Commando's, Northwest's convertible Douglas C-54 cargo-passenger aircraft, the Douglas DC-6A Liftmaster and C-74 Globemaster.

Major interest was attracted by Douglas' Liftmaster. A 1950 Ford, a Willys Jeep and twin-row radial engine were loaded through its hydraulically-operated main cabin door. The built-in, electrically-operated hoist (4,000 pounds capacity) was used to raise and lower the Jeep and engine but the Ford was loaded using a platform truck featuring an extensible body.

Visitors were as impressed by the lack of equipment as by what was on hand. There were differences of opinion in the earlier discussion meetings, as to the need for truck-level loading floors in aircraft and elaborate loading docks, but it did seem that efficient handling of air-cargo will depend on basic physical improvements in terminals.

Study and Results

On hand with some factual data was on this subject L. R. Hackney, air cargo sales engineer for Lockheed Aircraft Corp. Hackney outlined the results of three years of independent research conducted by Lockheed in conjunction with its subsidiary Lockheed Air Terminal. A scale model of one particular proposal, built by The Food Machinery Corp., Riverdale, Calif., was on display in the room adjacent to the conference hall.

Following consideration of various straight-line, modified T, octagon and hexagon arrangements, Lockheed selected the plan shown here because it provided the simplest design with maximum ramp area and loading stations for a given area. The terminal design per-

mits spotting of four cargo airplanes around each wing of the building, a total of eight. Each of these wings in the V-shaped building provides 5,000 sq. ft. of enclosed warehouse area plus office space.

Capacity & Cost

A terminal of this design and dimensions would handle up to 80 tons of freight per hour and would cost about \$250,000, if constructed for use in warm climates. A class A building, such as might be required in colder climates, would probably boost the price to \$300,000. While Hackney pointed out that there is an urgent need for establishment of air freight terminal facilities at points like New York, Chicago and Los Angeles, there appears to be no indication that anyone, including Lockheed, expects to go ahead with construction of such a terminal at this time.

Basic layout of the model terminal involves the use of two rectangular building wings at an angle to a central open V arrangement. The two buildings

(see cut) are at 50 x 100 feet in size and are rotated 60 degrees at the short side. Each of these wings features a truck dock on one side and airplane loading positions on the alternate or field side. Rather than moving the cargo through the building, a powered conveyor belt is used to move freight around the outer dimension at a speed of about 3 miles per hour.

Powered Conveyor

Actually the conveyor is a sprocket and chain drive (see photo on page 18) which is mounted in the ceiling of the terminal. Vertical shafts are used to connect the conveyor with small carts which move in a continuous path from the area of the truck docks around to the loading platforms. In this manner the conveyor can be used for loading and unloading of aircraft.

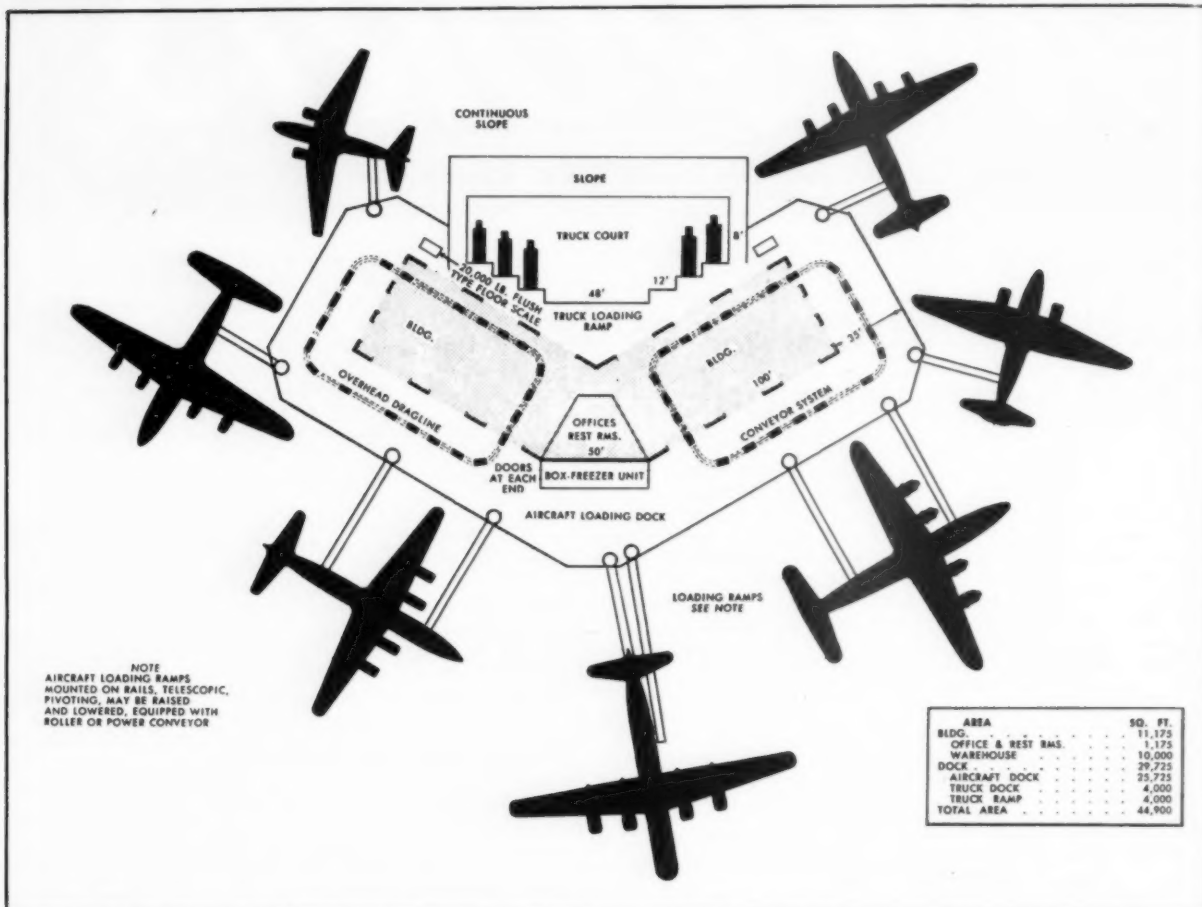
Providing the flexible link between the fixed terminal docks and the airplane proper are mobile ramps which connect the 100-inch-high platform with any type aircraft. The ramps are mounted on dual, four-wheel trucks which make it a simple matter to move them into place after the airplane is spotted. This arrangement also simplifies placing of the airplane since exact spotting is not critical. The ramps can be adjusted to suit the height of the individual airplane loading doors.

Hackney indicated that ample floor

LOADING RAMP (BRIDGE)



THESE SKETCHES show how the adjustable and mobile loading ramps can be adapted to various types of aircraft, regardless of the aircraft's floor level. It appears that the ramps are a major feature of the terminal design and a feature which might readily be adopted to present day terminals.



THIS IS A plan view of the model air freight terminal which Lockheed Aircraft studies have indicated will provide optimum handling facilities at minimum costs. This terminal would cost about \$250,000 and handle up to 80 tons of cargo per hour.

space, rather than volume inside the warehouse, is the critical factor. In listing dimensional data on various military and commercial cargo transports, he observed that two of the planes have more than 1,000 sq. ft. of cargo floor area; however, one of these was the Lockheed 949 on which studies were recently suspended. The other is the Douglas C-124 with 1,415 sq. ft. The Boeing C-97 has 846 sq. ft. cargo floor area, the Douglas DC-6a has 828 and the C-121 Constellation 755 sq. ft.

Handling

Cargo for these airplanes is received from the delivery trucks and off-loaded by gravity down a conventional skate or roller conveyor. A section of the conveyor is attached on a dial weight scale. Incoming shipments are weighed, marked and transferred to the carts moved by the conveyor chain. The trucks, or carts, on the conveyor chain line are marked with various cities along the route. Upon reaching the airplane side of the terminal wing, conveyor trucks can be unloaded or the trucks disconnected and wheeled over the ramp into the airplane.

This open system of cargo handling

expedites the sorting and distribution of freight, allows interspersing of cargo at any time within the floor pattern, loading and unloading can proceed at the same time and it permits use of alternate handling methods.

From the practical standpoint, Lockheed's design provides for minimum capital investment by using standard building components, building materials permitting use of standard truss sections, doors, etc., minus all frills.

Hackney concludes that the amazing growth and potential development of air freight has occurred despite the crude, ineffective and even wasteful methods used in the "on and off" loading of air cargo. If the cost of ground handling is to be reduced to its proper level, constructive steps in the direction of terminals such as these must be taken soon, he said.

AAAE Meeting to Feature Airport-Airline Forum

Five top-ranking airline officials and five leading airport men will take part in a forum discussion of their mutual problems as a highlight of the 22d an-

nual business meeting of the American Association of Airport Executives next April 16-20 at Columbus, Ohio. Convention theme: "Operation Co-operation."

An impartial aviation figure of national importance to be agreed upon by representatives of both the airports and the airlines will serve as moderator.

Air freight carriers, petroleum companies, fixed-base operators, aviation publications, manufacturers and other segments of the aviation industry also will take part in the program. Convention headquarters will be at the Neil House Hotel in Columbus.

Aero Insurance Formed

Aero Insurance, Inc., with offices at 116 John Street, New York, and the Board of Trade Building, Chicago, has been formed to serve as aviation manager of the American Fidelity and Casualty Company and the American Fidelity Fire Insurance Company, operating through the agency system.

Chief underwriter of the new insurance firm is D. Murray Stewart, formerly assistant general manager of Aero Insurance Underwriters.

SIKORSKY *Helicopter* NEWS

SIKORSKY AIRCRAFT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION



BRIDGEPORT

CONNECTICUT

Today air mail delivery by helicopter is "old stuff" to private citizens and businesses located in and around the Los Angeles area.

On October 1, 1949, Los Angeles Airways, Inc. celebrated its second anniversary of carrying air mail via helicopter in southern California. For two years now, LAA has been proving the advantages of this new phase of air mail operations. Through the use of versatile Sikorsky S-51s, slow-downs caused by surface deliveries have been practically eliminated. Business firms, especially, appreciate the saving of as much as twenty-four hours on air mail delivery.

From the airport to the Los Angeles Post Office roof top and on to the outlying districts, these Sikorsky helicopters lift the mail over surface congestion on a schedule that has established many records.

During the past two years, more than 6,000,000 pounds of mail have been carried; more than 600,000 revenue miles were flown; and - 96% of all scheduled flights were completed.

Rugged Sikorsky helicopters, the only ones used, have averaged a landing or take-off every $5\frac{1}{4}$ minutes each twenty-four hours proving their worth to the Post Office, to Los Angeles Airways and to the people being served.

SIKORSKY AIRCRAFT

Bridgeport, Connecticut

Connecticut Votes Money To Improve Bradley Field

By KEITH SAUNDERS

The \$2,000,000 bond issue authorized by the state of Connecticut to finance a terminal building and other improvements at Bradley Field, Windsor Locks, gives assurance that Bradley will finally become a major commercial airport, second in New England only to Boston's Logan International Airport.

Strategically located about midway between Hartford, Conn., and Springfield, Mass., it already is well on its way toward becoming a major air terminal serving a population area of nearly 900,000.

The \$2,000,000 will be used to replace the war-built temporary terminal with a modern facility, to extend the instrument runway from 5,000 to 7,000 feet, to provide a new access road, and to make a few other needed improvements.

In a case now pending before CAB, American Airlines seeks certification to serve Springfield from Bradley instead of from the smaller Barnes Airport at Westfield, and United Air Lines and Eastern Air Lines, now certificated to serve only Hartford through Bradley, seek certification also to serve Springfield through that field.

Fighter Base. Nearly a year before Pearl Harbor, the state of Connecticut acquired 1,200 acres of land in Windsor Locks and environs and made it available to the government as the site for a fighter plane base. Subsequently, about \$15,000,000 in Federal funds was expended in grading, draining and preparing the site, paving runways and taxiways, providing utilities, erecting barracks and other necessary buildings, and otherwise developing the field.

Bradley was de-activated as an Air Force base in late 1945, and the state was allowed to take it over on an in-

terim permit pending its full release by the War Assets Administration. The final transfer was accomplished about 15 months ago, thereby paving the way for Connecticut to start developing it into a major commercial field, a project advocated since early 1943 by Francis S. Murphy, general manager of the Hartford Times, chairman of the aviation committee of the Connecticut Development Commission, and chairman of the Connecticut Aeronautics Commission.

Located 13 miles north of Hartford and 12 miles south of Springfield, Bradley Field is a logical joint air terminal for the two cities. The fact that it is across the state line has not prevented Springfield from accepting Bradley as its air terminal, especially since Massachusetts had twice voted down a proposal for state purchase and development of Barnes Airport.

Features. Here are some of Bradley Field's facilities and advantages:

Three hard-surfaced runways, 5,000 feet long and 300 feet wide, plus ample taxiways; 22 miles or more of hard-surfaced roads; sewage disposal facilities adequate for a city of 35,000 people; a water supply sufficient for a city of 20,000; a control tower; a spur railroad track; favorable meteorological conditions; an instrument landing system; zoning ordinances that prohibit the construction of obstructions around the field; restaurant facilities, a Weather Bureau station and fire and police protection.

United Air Lines, American Airlines and Eastern Air Lines have moved their Hartford operations from Brainard Field to Bradley, Northeast Airlines has transferred there from Barnes Field, Wiggins Airways uses the field, and Transocean Air Lines has its eastern operations base there.

Airport Notes

Work has started on a \$96,000 runway lighting project at **Madison (Wis.) Municipal Airport**, to include: Line Material (Bartow) high intensity lights on the N-S instrument runway, and Line Material medium intensity lights on the two diagonal runways. Airport management is wrangling with CAA over latter's proposal that the Crouse-Hinds floodlights now in use be removed because they present an obstruction to operation of the Instrument Landing System now being installed.

It has been ruled that only state statutes or county ordinances may be legally enforced at the **Seattle-Tacoma Airport**, and the county sheriff has been told he need not enforce "airport ordinances" issued by the Port of Seattle, which operates the field. . . . The borough council of **Bernardsville, N. J.**, had adopted an ordinance providing that heliports and other private landing strips may not be built within the corporate limits without a city license, and that such a license will be issued only after the operator obtains written consent of at least 90% of the residents living within half a mile of the field and the council has made certain the field will not be a nuisance.

Chamber of commerce at **Sacramento, Calif.**, is supporting a proposed 4,000-foot flight strip on the new 900-acre state fair site at Sacramento.

Sky Chefs, Inc., has won the restaurant concession at **Hancock Airport**, Syracuse, and will spend \$53,000 to develop the concession. . . . The old **Municipal (Amboy) Airport**, at Syracuse will be put up for sale at public auction on Dec. 27, the city having voted to abandon it for park and aviation purposes.

The cornerstone of the \$650,000 administration building at **Allentown-Bethlehem (Pa.) Airport** has been laid. . . . T. L. James & Co., Ruston, La., was awarded a \$1,557,454 contract for work at the **Greater Fort Worth International Airport**.

Los Angeles city council has approved the annexation by the city of San Fernando of 33 acres of land needed for expansion of the present **San Fernando Airport**.



THE WAR-BUILT temporary terminal building now in use at Bradley Field, Windsor Locks, Conn., will be replaced, probably within the next year, by the modern structure depicted in the architect's drawing shown here. The new terminal building, badly needed

at fast-growing Bradley Field, will be one of several improvements to be financed by the \$2,000,000 bond issue recently authorized by the state bonding authority. It will be used by American, United, Northeast, Eastern and Wiggins Airways.

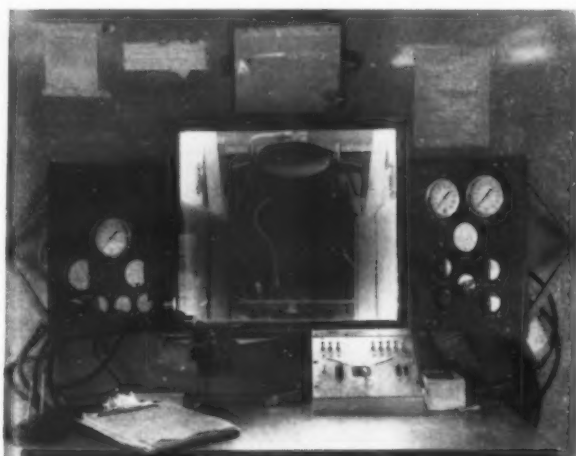
PRETESTED IDEAS

Roadable Test House

PRESENT DAY thinking in engine test equipment makes it appear that an elaborate test house facility is necessary to handle the larger engines used on post-war transports. Shown on this page are several views of equipment now being used by Northwest Airlines and Continental Air Lines for testing their engines. It is interesting to note that NWA is now completing work on a similar unit for testing the Pratt and Whitney R4360 engines which power



their new Boeing Stratocruisers, the largest engines and airplanes now in commercial service. The test units are built on truck and bus bodies which make it possible to mount the engines in the hangars, then drive the trucks away from the buildings for actual testing.



Control Cabin

Typical of the control cabins used on this type installation is the interior photo showing the "cockpit" of the Northwest Airlines test unit. The large window provides the operator with a view of the engine while conducting tests. As viewed through the windows, the tanks on either side are fuel storage tanks and the one directly ahead supplies engine oil. Note that engine controls and instrumentation are kept to a minimum. In addition to switches, throttles and fuel controls, the control panel carries oil pressure gages covering the left and right engine pads, rear case, governor supply, torque pressure, high and lower blower clutches, fuel and water pressure, main oil pressure, air temperature, rpm and manifold pressure. Charts posted on cabin walls provide ready reference for operating data. The cabin is very roomy with adequate space provided for comfortable working conditions.

In the version now under construction for the R-4360 engine, Northwest Airlines used a set of three Rotameters in the control room to provide an accurate measure of fuel flow to the engine. These meters are connected in series with the fuel supply and engines.

Continental's Version

When Continental built this roadable engine test house it was on the basis of experience gained with a previous unit. Continental Air Lines has tested over 600 engines used in DC-3's on a similar test unit made from an old Mack truck and used since 1940. The new unit, for testing the P&W R-2800 engines powering the Convair Liner, was built up from a second hand bus which had previously been used for conducted tour work in Colorado. Like Northwest's units, the CAL test house makes it possible to conduct post-overhaul engine tests at a minimum cost.



Plane Utilization Decreases:

1948 Business Flying Gains, Training Aircraft Use Drops

Use of the airplane for business purposes registered an appreciable increase in the continental United States last year, while its use as a vehicle for instructional and pleasure purposes continued to decline.

These facts, brought out in a Civil Aeronautics Administration survey of civil (non-airline) aircraft utilization, came as no surprise to industry observers, but the figures and percentages revealed a changing pattern of civil flying that was of more than passing significance.

Here are some of the salient facts brought out in replies from a sampling of owners of 16,000 aircraft:

Total Down 7%. Non-military and non-airline flying generally was down 7% from its 16,334,000 hours of flying in 1947 to 15,130,000 hours last year, although the number of aircraft in use was higher—89,550 as against 86,380 in 1947.

An average of 169 hours per aircraft was flown in all types of flying during 1948, compared with 189 hours in 1947, a drop of 11%.

Of the total hours flown, 57% were for instructional purposes; 17% were for personal (non-business) usage; 17% for business flying, which included not only flying for corporate or executive purposes but flying by individuals, including farmers, on personal business; 4% for transportation-for-hire; and 4% for other revenue-producing activities, such as crop dusting and aerial photography.

Of the total aircraft operated, however, 50% were engaged in personal flying, 36% in business flying, 34% in in-

structional flying, 5% in transportation-for-hire, and 8% in other revenue-producing activities. (The percentage totals exceed 100% because many of the aircraft covered in the survey were used in two or three types of flying).

Business Flying Up. Brightest spot in the entire picture was the sharp gain in business flying, which rose 31% from 1,966,000 hours in 1947 to 2,576,000 hours last year. The number of aircraft engaged in this type of flying last year was 32,110, or 36% of the national total, whereas the comparable 1947 figures had been 26,590 aircraft and 31%.

It was the second consecutive year in which business flying had made the largest proportionate gain of any type of flying.

On the other side of the picture, instructional flying declined from 10,353,000 hours or 63% of the total in 1947 to 8,701,000 or 57% of the total hours flown last year. More discouraging, from the standpoint of aircraft manufacturers, was the fact that the number of aircraft used in flight training fell from 32,620 or 38% of all aircraft in 1947 to 30,840 or 34% of the 1948 total.

Reflecting the plight of the fixed-base operators whose principal revenue comes from flight instruction, the average number of hours flown by planes used for this purpose dropped off to 282 hours last year, as against 317 hours in 1947. And this despite the fact that one-third fewer planes were being used in 1948.

Fewer Charter Planes. In the category of transportation-for-hire flying, the level of flying remained about the same as the year before, but the number of planes involved was down

sharply, reflecting a high mortality rate among fixed-base operators carrying on this activity largely with small planes.

Hours flown for hire last year totaled 537,000, compared with 546,000 hours the previous year, but the average hours flown per plane was up from 90 hours in 1947 to 121 hours in 1948, due to a drop in the number of for-hire planes from 6,100 to 4,440. Expanded operations of a growing number of irregular air carriers, who obtained heavy usage from a relatively few transport-type aircraft, kept the overall volume of this type of flying to within 2% of the 1947 volume.

Miscellaneous other revenue-producing activities accounted for only 529,000 hours or 4% of all private flying hours last year, with 6,830 aircraft engaged. In 1947, 733,000 hours were flown in these activities by 7,180 aircraft.

CAA pointed out that the contraction in instructional flying last year and the consequent substantial reduction in the number of flight schools had an inevitable adverse effect on transportation-for-hire and other revenue-producing flying, since many operators of flight schools also perform these types of flying.

Personal Flying. There wasn't much change in flying for pleasure or personal purposes from the relatively low 1947 level. Hours logged in this category totaled 2,606,000 or 17% of all flying hours, as against 2,616,000 hours and 16% in 1947. There were 45,030 planes engaged in this kind of flying last year with an average utilization per plane of 58 hours, compared with 43,930 planes and an average of 60 hours per plane in 1947.

CAA said its survey covered upwards of 10,000 aircraft out of the 89,550 civil non-airline planes in the country last year. The survey was conducted by mail and personal interviews, using standard sampling techniques. Final and complete figures will appear in CAA's annual publication, "Aircraft Use in 1948."

Civil Aircraft (Non-Airline) Use Comparison, 1947 and 1948
(CAA Sample Survey Results)

Type of Flying	AIRCRAFT					HOURS FLOWN						
	1948		1947		Per Cent Increase or Decrease	1948		1947		Per Cent Increase or Decrease	Average hours flown	
	Number	Per Cent	Number	Per Cent		Number (000)	Per Cent	Number (000)	Per Cent		1948	1947
Combined all types*	89,550	..	86,380	..	4	15,130	100	16,334	100	-7	169	189
Personal	45,030	50	43,930	51	3	2,606	17	2,616	16	..	58	60
Business	32,110	36	26,590	31	21	2,576	17	1,966	12	31	80	74
Instructional	30,840	34	32,620	38	-5	8,701	57	10,353	63	-16	282	317
Transportation for hire	4,440	5	6,100	7	-27	537	4	546	3	-2	121	90
Other revenue producing	6,830	8	7,180	8	-5	529	4	733	5	-28	77	102
Not classified	1,760	2	2,120	2	-17	181	1	120	1	51	103	57

* The number of aircraft in the various categories total to more than the number in "Combined all types" because there can be more than one type of flying per aircraft.

NOTE: This table excludes all aircraft operated by the scheduled airlines and the Civil Aeronautics Administration.

Fixed-Base Briefs

Appearance of Air Force and Navy planes in air shows in the future will be limited to patriotic national holidays and "events of national importance," according to a directive issued by Defense Secretary Louis Johnson. The action was taken, it was said, because a deluge of requests for planes to appear in local air shows has hampered the training program of the military services.

Southern Airmotive, Inc., Napier Field, Dothan, Ala., has been appointed Mooney distributor for Alabama, Mississippi and southwest Georgia . . . **Birmingham Flying Service** at Roberts Field, Birmingham, went out of business December 1.

Curtis Quick, said to be the oldest duster pilot in the business, has joined the staff of the **University Airport, Inc.**, at Wichita, as seeding and dusting specialist. He started in 1924 . . . **Aubrey Patterson**, owner and operator of Patterson Parachute Service at Baltimore, has been rated as Master of Parachute Maintenance.

Alama Aviation, Inc., has been granted permission to erect a \$150,000 hangar at San Antonio Municipal Airport and has been given a 30-year lease on the land to be used . . . **County Air Transport, Inc.**, Lloyd Rondeau, president and chief pilot, has set up a charter flying service at Westchester County (N. Y.) Airport.

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Aviation Sales and Service

Desert Airpark: Another person who is doing something about the complaint that there aren't enough attractive vacation spots to which a private pilot can fly and park his plane near his hotel is H. L. Gogerty of Palm Springs, California. Gogerty thinks he has just the place in his Palm Desert Airpark and Desert Air Hotel, located about ten miles southeast of the famed resort frequented by the Hollywood set. The airpark has a turf landing strip, 3,000 feet long, which is kept green all winter with a sprinkler system, and offers refueling and servicing facilities. The hotel, offers a swimming pool, riding horses, a snack bar, maid service and housekeeping apartments for those who want to prepare their own meals. Most private and chartered planes can land at the airpark. William B. Brown is manager of the hotel and airpark.

Piper Continues Lead: Piper Aircraft Corp. continued to lead lightplane firms in shipments during October. Delivery of 51 Clippers accounted for nearly 25% of the 208 total reported by nine companies to the Personal Aircraft Council, Aircraft Industries Association. The Cessna 170A was second with 31 and Beech Bonanza third with 27. The October total was less than half the 465 planes reported a year ago. Shipments for first 10 months of this year were 3,106 aircraft, valued at \$1,136,000.

'Pilot Is King': Oklahoma City has had one of the earliest and best of the close-in airfields and it's paying off. But one reason it pays off is that Harry Reed, manager of the Downtown Airpark, is alert. His slogan is "Where the private pilot is king." He has seven cars available for pilots to use on arrival. There's no charge—and they can have free parking at a garage downtown. No signing of slips, bonds, deposits or anything like that. And itinerants who stop at his airpark always get a letter later on thanking them for their patronage and inviting them back. Harry gets lots of repeat business as a result.

Hangar Flying Doesn't Sell: Aggressive salesmanship pays off in aviation, like in most other businesses. T. Guy Miller, progressive president of Wings, Inc., Philadelphia Beechcraft distributor, reports that in a five-day period in October, Wings, Inc. sold one new Twin Beech, two used Twin Beechcraft, and one Lockheed Ventura—total volume, \$212,800. The secret, says Guy, "Get out of the office—hangar flying doesn't sell airplanes."

California Potential: The state of California, which on July 31 had 10,452 civil aircraft registered with CAA (187 fewer than a year earlier), has at least 100,000 citizens who could afford personal aircraft, according to John F. Turner, vice chairman of the California Aeronautics Commission. The catch is getting a lightplane with automobile-like utility, he said.

Ainsworth (Nebraska) Air Service, formerly owned by George Manes and Don Higgins, is now owned and operated solely by Higgins, who bought out his partner. Manes is looking for another operation in the State of Nebraska . . . New officers of Nebraska NATA are: **John Clinch**, of North Platte, president; **Bill Kite**, of Lincoln, vice-president; **Esmund Avery**, of Omaha, secretary-treasurer . . . **Kearney Air Service**, formerly located 4.5 south of Kearney, has moved its operations to the former Kearney Army Air Base. **Birdsall Field**, south of the town, has been abandoned.

General Aviation, Inc., at Lost Nation Airport, Willoughby, Ohio, has been appointed Cessna Aircraft distributor in the central northern Ohio area. **William McNeely** is head of the firm.

Central Aircraft of Yakima, Wash., has a contract for seeding 5,200 acres of logged or burned timberlands in Oregon and Washington by helicopter . . .

Charles S. Chester, formerly flying representative of the General Petroleum Corp., took over the job of Director of Aeronautics for the State of Washington on November 15.

Ray Lauterbach, manager of Sumner (Ia.) Airport, has advised that all flying hunters are welcome to hunt on his farm. He has an abundance of pheasants and his farm is closed to all except those who fly in . . . **Boone (Ia.) Flying Service** has moved to the municipal airport . . . **Wicks Field**, Garner, Ia., has been sold by Garner Airways, Inc., to Bill Evans, who has been managing the field and will continue to operate it.

CLASSIFIED ADVERTISING

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Attention: George Porter

WINGS OF YESTERDAY

25 Years Ago

In order to facilitate the prompt handling of air mail, the Post Office Department approved the use of a special air mail envelope, carrying a three-quarters inch red, white and blue band horizontally across its entire width.

The President's budget message, delivered to Congress on December 2, 1924, allowed \$65,000,000 for the Air Services in 1925-26.

Representative Charles F. Curry of California introduced a bill in Congress on December 1, 1924 which would set up a separate air force, presided over by a new member of the Cabinet to be known as Secretary of Aeronautics, and would create an air academy similar to West Point or Annapolis.

LETTERS

Claims Coach Lead

To the Editor:

William V. Henzey's article on air coach service in your November 15 issue again credits Capital Airlines with starting air coach service.

This is O. K. domestically, but Braniff actually started the air coach idea with its service from Houston to Lima which was inaugurated in June, 1948.

We currently operate two air coach flights a week, with DC-4's. Our air coach service proved so popular, that both PAA and Panagra copied it this year.

JOHN B. WALKER
Vice President
Braniff Airways
Dallas, Tex.

(Editor's Note: While giving Braniff due credit for a good idea, the record indicates that the Latin American operation was originally designated by Braniff as a combination "cargo-tourist" service, and until recently was not referred to as a coach operation. Also, operated initially on a once-a-week basis, the service lacked various characteristics now associated with an air-coach operation. There has not been a special coach tariff filed by Braniff for this service—only a rule in its regular international tariff which provides for a 25% discount for passengers using the cargo-tourist flight. Also, the November 15 article referred to was on DOMESTIC operations and, we believe, Capital belongs in the position in which it was placed.)

CAA Not to Blame

To the Editor:

The December 1 issue of your magazine reached me this morning, and the story on lightplane utility as discussed at the ADMA met was particularly interesting to us. Unlike the people who want to "Let Joe do it" on this better lightplane business, we are trying to be "Joe."

We have had a hell of a time doing this up to this point, but we want you and the rest of the critics to know that our trouble hasn't been due to government interference or CAA as far as what and how we are doing our project. In fact, the CAA has been more than helpful in assisting us with our problems, supplying us with test

equipment, checking our engineering, advising us on engineering where they might have information available, supplying background information on projects which have gone before in our line, and providing us with information on the engineering problems of such things as our shaft drive and other uncommon features.

Without their assistance, we would not have been able to develop our prototype machine at the extraordinarily low price that we did. The CAA has now gone on to assist us in our project by giving us permission to build and sell 12 demonstration models for sales promotion, service test, and of course to aid us in getting our development to the public.

The CAA required nothing more than a simple letter stating the facts of our project, some basic engineering information and a good look at our machine before they decided that we should be permitted to sell these service test machines to the public even before we had completed a formal ACT program. As a matter of fact they are in complete agreement with us on the fact that a "Flying Automobile" is so much different from a conventional lightplane that some sort of new ATC requirements are going to of necessity be developed just as has been the case in the Helicopter industry. Both are aircraft, but certainly they cannot be thrown into the same requirement basket.

It may be interesting to know, that we have met the CAA strength requirements as demonstrated in static tests on some components only to find that these components have proven unsatisfactory during the six months of road testing which the auto portion of the AEROCAR has now completed. In numerous instances we have had to rebuild parts which met the CAA ATC strength requirements for aircraft but which would not hold up for the automobile requirement.

The result of our testing to date indicates that Part 03 of the CAR is intended only as a guide, and the CAA personnel with whom we have worked certainly are of the same opinion. Now maybe the Seventh Region group has a different concept of things. That is more than a probability. I have had experience with some

of the people back east in other CAA regions, and I know that they vary.

However, I suspect that the real reason for all of the fuss Bollinger and Koppen have made is due to their being left out of something. As for the Helioplane, it is a nice job. But what is new about it? Piper had a couple of models that would do everything it would do. Tucker, Ryan, NACA, Fairfield, Boeing, and others have been over the same ground.

You may be wondering by how then just what has been the trouble to which I first referred? The trouble is a simple one. It isn't lack of ideas, CAA interference, lack of competent personnel, lack of facilities, or any such simple explanation. It is pure and simple.

The present tax structure and laws have frightened and influenced venture capital to the point of extinction. People just aren't available with money to invest in something which, if it makes a "killing" is going to have to pay it all out in taxes; and which stands a good chance of not making the grade in the face of the already well publicized failures in its field.

I spent 10 months personally selling the first \$50,000 in subscriptions to my project. These 10 months could have been used for "toward the end" rather than the "means" to good advantage. Now that we have our machine working, we are again faced with the finance problem. In this regard, we are investigating every angle short of giving the project to some big company.

If we can find \$200,000 it appears that RFC will match it. That should see us well along to putting a few AEROCARS into the hands of the public. However, until we solve the finance problem, even the AEROCAR is not going to be able to try to make an impression on the private aviation situation.

If you have any suggestions, be sure to let us know. However, we do want you to know that the CAA requirements are not the basic reason for the lack of development of a better lightplane as far as we are concerned.

MOULTON B. TAYLOR
President
AEROCAR, INC.
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En Route

WAYNE W. PARRISH

MAPS AND SUCH. I had just sat down at the machine to type out the words that for many years I've had a fetish about airline maps when it occurred to me that I ought to find out what "fetish" really means before trying to impress someone about an erudition that doesn't exist. Since my dictionary says fetish is "an object worshiped among savages as the incarnation of a spirit," either my memory about the classroom use of the word fetish fails me completely or I ought to see a psychiatrist about why I'm that way about maps.

Whatever it is I've got about maps, I've just received from **Rog Wolin**, Pan American's public relations director for the Latin American Division, a series of new multi-colored route maps which his company now places in seats along with the other literature.

This man Wolin has a long memory. In an accompanying note he says the maps may not be just the kind I had suggested but they would have to serve the purpose.

What I mean about a memory is that it was fully two and a half years ago when Rog asked me for suggestions about improving the passenger service after I had arrived back in Miami from a PAA trip. I had suggested maps on the order of the kind that I had found very useful while flying around Africa in 1946 with British Overseas Airways. These 1949 PAA maps are very fine, and contain descriptive information about the routes, but what I had suggested almost three years ago would have cost practically nothing and would have given more information about the actual routes.

Of course the high-flying pressurized DC-6's and Constellations and Strato-cruisers have all but obsoleted the need for route maps within the U. S., but there are plenty of DC-3 routes and plenty of international and foreign routes where maps are very helpful to those passengers interested in seeing the country and knowing where they are at any given moment.

In 1946 I hopped on a BOAC Lockheed Lodestar at Addis Ababa, Ethiopia, and flew east to British Somaliland and then north to Aden, west to Asmara and Khartoum and thence up the Nile to Cairo. Several weeks later I flew in another BOAC Lodestar on a local route south from Cairo to Khartoum and on to Nairobi in Kenya Colony. Reading matter being somewhat scarce at times in Africa, there wasn't much to do except sit for long hours looking at the terrain and points of interest.

In each BOAC plane were one or two airway maps glued on to cardboard and then laminated to protect them from frequent handling. Each route was outlined in ink along with the distance in miles and hours. They were just the same airway maps that pilots use for navigation in the U. S. but for air

traveling they are much superior to any other kind of map because the landmarks are all carefully spotted along with towns, villages, roads, railroads and airports.

I have found the same method used by DNL, Norwegian Air Lines, on its far northern route. Passengers can follow these maps quite easily and most of those flying new routes for the first time find maps most helpful.

There are quite a few airlines in the U. S. that could do the same thing—just glue airway maps on cardboard and pass them around to interested passengers. Monarch, Challenger, Pioneer, Trans-Texas—these feeders, especially, flying DC-3's not too high off the ground, could adopt this inexpensive system.

Quite evidently, I failed to sell PAA on the cheap method. It has done it the hard and luxurious way—attractive folder maps which passengers can take home, nice photos as well as the route maps, and excellent for sales promotion. But they still don't meet the requirements of the back-seat pilot who likes to think he can navigate and can't rest until he knows the name of that reef or cape or village.

MARTITA. It would surprise a lot of church dignitaries to know that there is a new "saint" in the person of **Clyde Fullerton**, TWA's general sales manager. And I do mean Saint Fullerton. I ran into this story in Mexico City last August in the office of **Bill Hottel**, TWA's off-line sales representative. Bill's assistant and secretary was a very cute, pert and intelligent Mexican lass by the name of **Marte Trejo**, her first name being Martha in English and Martita if you know her well enough. Petite Marte drops into church every day to pray to her patron saint and told Bill she had been praying for a raise and a trip to the U. S. "You're praying to the wrong saint," Bill told her. "If you want that raise you'd better pray to Saint Fullerton."

That did it. Marte has been praying to Saint Fullerton ever since but we don't know whether he's answered the prayers with that raise. Bill has just lately moved to TWA's Los Angeles office, but all we can say is that TWA had better keep Marte Trejo because she's a bell-ringer at ticket sales.

MORE TIME CHARTS. That item I printed here several issues ago about Esso Export's time chart distributed to international air travelers so they can tell what time it is in Ceylon while they're flying from Prestwick to Copenhagen, in case they want to know, brought a response from **Kenney Fromm**, district sales representative for PAA at Laredo, Texas. Seems that Gruen Watch Co.

made up a similar world timetable which has been passed out to PAA passengers for several years (although I never remember seeing one when traveling on PAA). It's a good disc and easy to use, but I think Esso's is more complete. All of these gadgets are very good to keep air travelers busy.

ASHES. This is a sad little item about a wonderful trip that might have been.

Jimmy Walker, Panagra's operations manager who lives in Lima, Peru, likes to do his own flying around Peru and Bolivia. It's fascinating country, up in the alto plano, with the high Andes peaks, Inca ruins, colorful Indians, and towns and cities at 12,000 feet elevation and up.

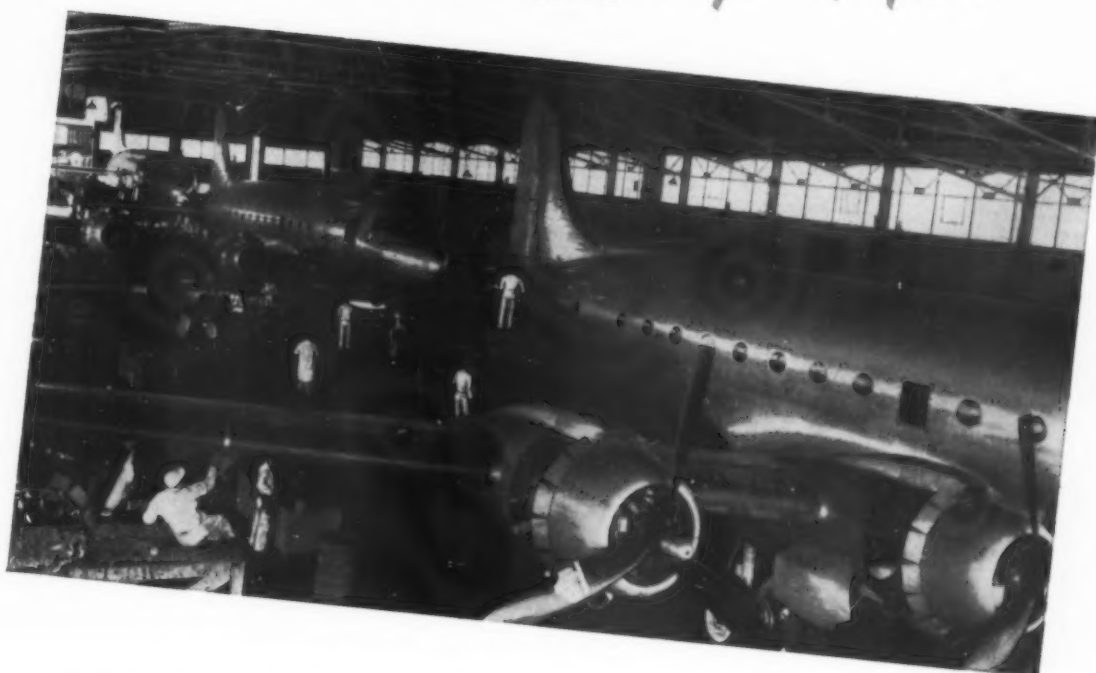
On my last several trips to Lima, Jimmy whetted my travel appetite by telling me of the Lockheed Lodestar he had purchased from LAB, the Bolivian airline, for his personal use. When he got the papers cleared to fly it to Lima, he'd let me know and I could come down and we'd spend several weeks flying around the Andes. He knew of a silver mining city of a quarter of a million people at 15,000 feet elevation which he said we'd visit.

Well, it would have been swell. But Jimmy wrote the other day the sad news about his Lodestar. Before he could get it into Peru, a revolution broke out in Bolivia and the rebels stole his plane along with a bunch of LAB transports and crashed it somewhere east of the Andes. All Jimmy has to show for it is a photograph of the wreckage. Total loss. No trip. The only consolation Jimmy has is that it isn't just anybody that can have a personal Lodestar stolen by rebels. If that's any distinction, make the best of it. Anybody else had his twin-engine transport stolen and crashed lately?

PET GRIPE. Why is it that the head table at every aviation banquet is so cluttered up with military brass these days that the toastmaster has to spend three-fourths of his time introducing generals and admirals? I didn't get up to the annual Wings Club dinner in New York recently but someone who was there told me that not a single civilian made the grade at the speakers' table. Nothing but military. Several years ago I was toastmaster at a couple of aviation dinners in Washington and so much time was taken up introducing generals and admirals that there wasn't time for anything else. The trouble with honoring one general or admiral is that you have to invite others to balance up unification and before long you have from a dozen to two dozen brass, all involved with protocol, and most of them weren't very interested in coming in the first place. It's been a bit over-done, or so I think anyway. Give the civvies a break for a change.

SALES APPEAL. Turkey is one of those few countries I haven't been too, as yet, but a reliable traveler who's been there has told me how a Turkish fruit peddler added eye appeal to the strawberries he was selling. He'd take a big berry, run it around inside his mouth to wet it completely, then put the berry back on top of the basket. It glistened beautifully in the sunlight. Nothing like keeping the dust off.

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